

**WHITE PAPER ON LAND,
INFRASTRUCTURE, TRANSPORT
AND TOURISM IN JAPAN, 2012**



**Ministry of Land, Infrastructure,
Transport and Tourism**

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※ Maps used in this white paper do not indicate exhaustive Japanese territory.

Introduction

In Japan there used to be a “prototypical” life course: take on a regular employment after graduating from school, get married in your twenties, and have children. For housing, you would leave your parent’s house, start by renting a place to stay, and then buy a house; changing residences in accordance with your life stage.

However, the lifestyle of contemporary people is increasingly diverse at every stage of their life’s course and vastly different from the lifestyle of previous generations. Although more people are advancing to higher education levels, unemployment rates and non-regular employment are on the rise; economic uncertainties lead more holding off from marriage or having and raising children. The number of people who remain single or married without children continue to rise. Also, instead of a house in the suburbs, more people are buying a condominium in a more convenient central area or living in a rented private property.

The world we live in has drastically changed in recent decades. The development of the transportation network made it possible to transport people and goods faster and cheaper than before. Also, the advancement of information technology made many things such as shopping, researching unknown countries, communicating with far away friends and family without leaving home possible, changing our traditional perception of “distance” and “time”. These environmental changes are also diversifying people’s lifestyles.

In the midst of these lifestyle changes, the lifestyle of “youth” who will assume a central role in society, as they continue to encounter milestones in their life course such as school, work, and marriage, will greatly influence the state of our country. As the youth explore new lifestyles land, infrastructure, and transport administration must accommodate these changes and support their lifestyle so that the people can lead a fruitful life from the present into the future.

Part I of the WHITE PAPER ON LAND, INFRASTRUCTURE, TRANSPORT AND TOURISM IN JAPAN, 2012 will cover the “lifestyle of youth and MLIT policies” and Chapter 1 will give an overview of socioeconomic changes surrounding contemporary youth and the changes in youth consciousness under these conditions. Chapter 2 will look at the specific changes in youth lifestyle analyzing various sectors from the perspective of “working”, “living”, and “moving” styles and reveal what is needed in the future for people to lead vibrant lives. Chapter 3 will cover the ideal direction and measures to be implemented in MLIT policies in the fields of “working”, “living”, and “moving”.

Also, Part II will report on the trends in various areas regarding MLIT policies by policy area.

<Reference: Chronology>

Year	Era	Past Age of Each Generation as of 2012						
		70 Years	60 Years	50 Years	40 Years	30 Years	20 Years	10 Years
1942	Showa 17	0						
1943	Showa 18	1						
1944	Showa 19	2						
1945	Showa 20	3						
1946	Showa 21	4						
1947	Showa 22	5						
1948	Showa 23	6						
1949	Showa 24	7						
1950	Showa 25	8						
1951	Showa 26	9						
1952	Showa 27	10	0					
1953	Showa 28	11	1					
1954	Showa 29	12	2					
1955	Showa 30	13	3					
1956	Showa 31	14	4					
1957	Showa 32	15	5					
1958	Showa 33	16	6					
1959	Showa 34	17	7					
1960	Showa 35	18	8					
1961	Showa 36	19	9					
1962	Showa 37	20	10	0				
1963	Showa 38	21	11	1				
1964	Showa 39	22	12	2				
1965	Showa 40	23	13	3				
1966	Showa 41	24	14	4				
1967	Showa 42	25	15	5				
1968	Showa 43	26	16	6				
1969	Showa 44	27	17	7				
1970	Showa 45	28	18	8				
1971	Showa 46	29	19	9				
1972	Showa 47	30	20	10	0			
1973	Showa 48	31	21	11	1			
1974	Showa 49	32	22	12	2			
1975	Showa 50	33	23	13	3			
1976	Showa 51	34	24	14	4			
1977	Showa 52	35	25	15	5			
1978	Showa 53	36	26	16	6			
1979	Showa 54	37	27	17	7			
1980	Showa 55	38	28	18	8			
1981	Showa 56	39	29	19	9			
1982	Showa 57	40	30	20	10	0		
1983	Showa 58	41	31	21	11	1		
1984	Showa 59	42	32	22	12	2		
1985	Showa 60	43	33	23	13	3		
1986	Showa 61	44	34	24	14	4		
1987	Showa 62	45	35	25	15	5		
1988	Showa 63	46	36	26	16	6		
1989	Heisei 1	47	37	27	17	7		
1990	Heisei 2	48	38	28	18	8		
1991	Heisei 3	49	39	29	19	9		
1992	Heisei 4	50	40	30	20	10	0	
1993	Heisei 5	51	41	31	21	11	1	
1994	Heisei 6	52	42	32	22	12	2	
1995	Heisei 7	53	43	33	23	13	3	
1996	Heisei 8	54	44	34	24	14	4	
1997	Heisei 9	55	45	35	25	15	5	
1998	Heisei 10	56	46	36	26	16	6	
1999	Heisei 11	57	47	37	27	17	7	
2000	Heisei 12	58	48	38	28	18	8	
2001	Heisei 13	59	49	39	29	19	9	
2002	Heisei 14	60	50	40	30	20	10	0
2003	Heisei 15	61	51	41	31	21	11	1
2004	Heisei 16	62	52	42	32	22	12	2
2005	Heisei 17	63	53	43	33	23	13	3
2006	Heisei 18	64	54	44	34	24	14	4
2007	Heisei 19	65	55	45	35	25	15	5
2008	Heisei 20	66	56	46	36	26	16	6
2009	Heisei 21	67	57	47	37	27	17	7
2010	Heisei 22	68	58	48	38	28	18	8
2011	Heisei 23	69	59	49	39	29	19	9
2012	Heisei 24	70	60	50	40	30	20	10

60s as of 2012:
Born 1943-1952

First Baby boom
(Born 1947-1949:
age 63-65 as of 2012)

50s as of 2012:
Born 1953-1962

40s as of 2012:
Born 1963-1972

Second Baby boom
(Born 1971-1974:
age 38-41 as of 2012)

30s as of 2012:
Born 1973-1982

20s as of 2012:
Born 1983-1992

10s as of 2012:
Born 1993-2002

Part I

The Lives of Young People and MLIT Policies

Chapter 1

Characteristics of the Mentality & Behavior of Young People

This white paper shall define people in their 20's or 30's as “young people,” and conduct the analysis accordingly. Also, the period within a person's 20's and 30's shall be considered “early life” (However, in some instances, people in their teens shall also be included in the analysis).

In Chapter 1, along with tracking the changes in the socioeconomic situation that surround young people, we will examine the foundation of young people's behavior in various aspects: the characteristics of their mentality, in order to analyze what distinguishing features describe the young people of this generation as a population group.

Section 1 Changes in the Socioeconomic Situation that Surround Young People

As a component that forms the mentality and behaviors of this generation of young people, how has Japan's socioeconomic situation been changing? In Section 1, we shall analyze the changes in the population structure, the long-term downturn of the economy, and the advancement of internationalization, as factors that influence the shaping of young people's mentality.

(1) Changes in Population Structure

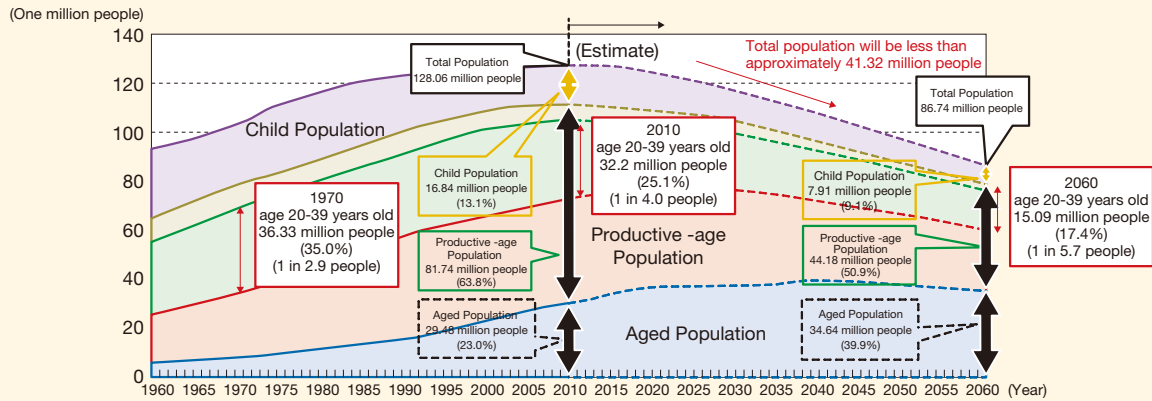
(Population decline, Progressively Aging Society with Fewer Children)

After World War II, the population of Japan steadily increased, and for the first time in 1967, we had a population of over 100 million people. However, since reaching its peak in 2008 with 128.08 million, the population number has been decreasing. According to the estimates of the National Institute of Population and Social Security Research, by the year 2048, the population will have declined to under the 100 million mark to approximately 99.13 million, and will have decreased to 86.74 million people by year 2060 (Graphic 1). Looking at the population trend in the long-term, it appears that the population which—since the end of the Meiji period, around 1900—had been increasing over the last 100 years, will now in the next 100 years decrease, until the population is back at the same population level with which we started in the 1900s. This means Japan is facing a level of population decline that we have yet to see in history (Graphic 2).

As for the number of young people, it was close to 36 million in 1970, and in 2010, approximately 32 million. However, that number has been estimated to drop below half the previous numbers, with roughly 15 million young people by the year 2060. The ratio of young people in the total population has also been in decline. In 1970, young people accounted for 35% (approx. 1 in 3 people) of the population, whereas in 2010, 25.1% (approx. 1 in 4 people). By 2060 the ratio is estimated to decrease to 17.4% (approx. 1 in 6 people).

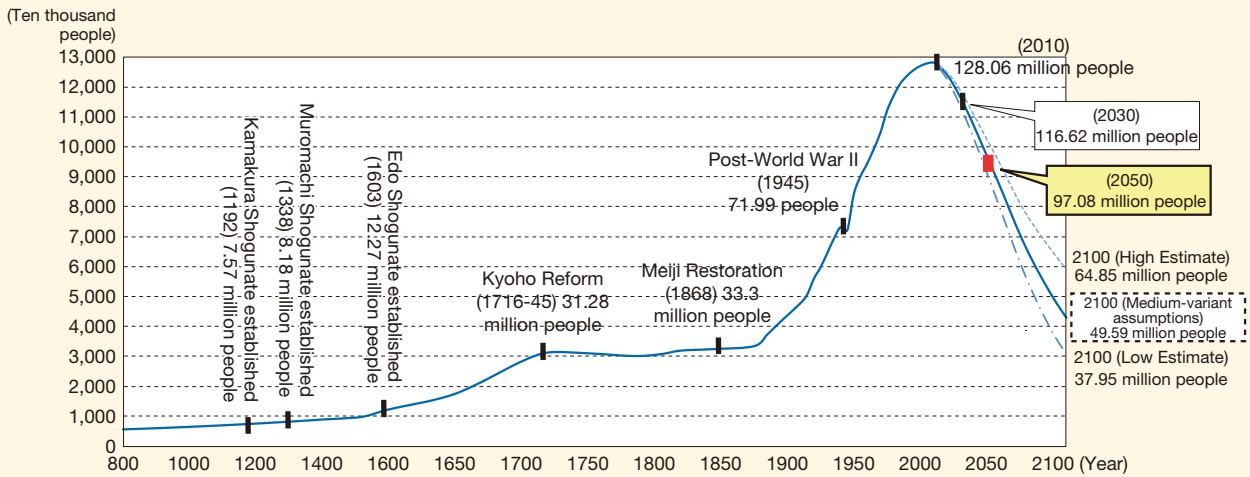
This decline in the population of young people is due to the drop in number of infants born. When looking at the trend for the number of infants born after WWII, the late 1940s saw the first baby boom, then in early 1970s, the second baby boom. After these two baby boom periods however, the number of infants born decreased, with a sharp drop from later 1970s to the 1980s. The number of infants born has been in steady decline since then, with a record low in number of births in 2011 (1.05 million births). The total fertility rate (the sum of the age specific fertility rates of women aged 15 to 49 in a given year, equivalent to the average number of children that would be born per woman if all women bore children according to a given fertility rate at each age) in 1947 was 4.54, yet by 1975 the rate had decreased to 1.91, and in 2005 it hit a record low of 1.26 (Graphic 3).

Graphic 1 Japan's Population Trend



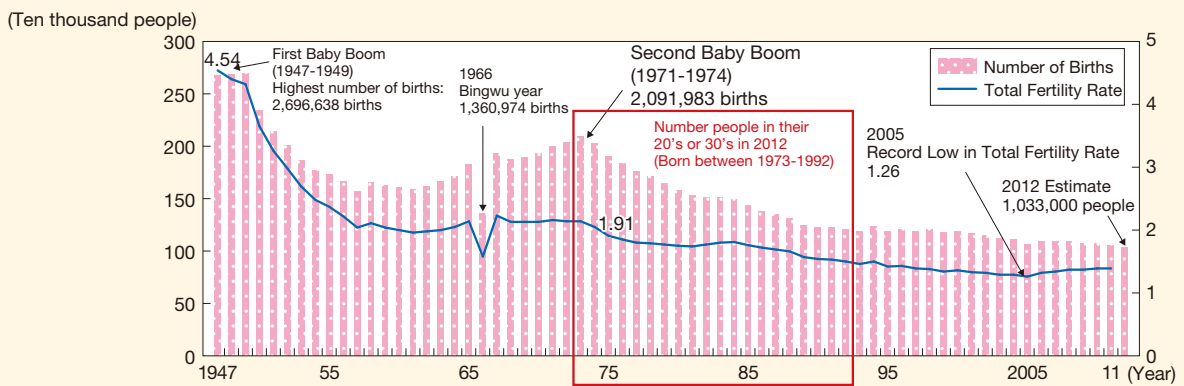
(Note) 1. "Child Population" are people aged 0-14, "Productive -age Population" are people aged 15-64, "Aged Population" are people aged 65 and over.
 2. Numbers within the () are the percentage data of child population, productive-age population, and aged population, each out of total population.
 (Source) Developed by MLIT based on Ministry of Internal Affairs and Communications (MIC) "Population Census of Japan (Population including proportionate division of unknown ages)", medium-variant assumptions from MIC "Population Estimate", National Institute of Population and Social Security Research (IPSS) "Population Projection for Japan (2012 January estimate)"

Graphic 2 Japan's Long-Term Population Trend



(Source) Developed by MLIT from: years before 2010 from MIC "Population Census of Japan", same source "2010 Basic Complete Tabulation on Population and Households", National Land Agency (NLA) "Long-term sequential analysis of population distribution in the Japanese archipelago" (1974); years 2015 and beyond from IPSS "Population Projection for Japan (2012 January estimate)"

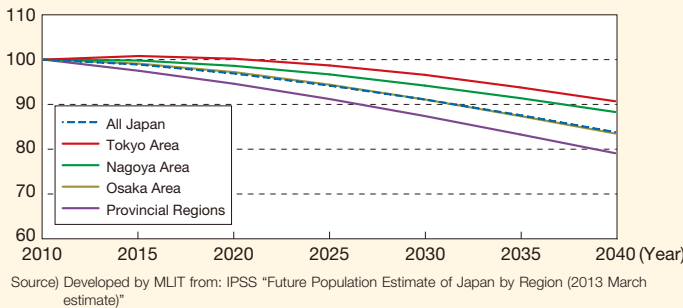
Graphic 3 The Number of Infants Born and Total Fertility Rate Trends



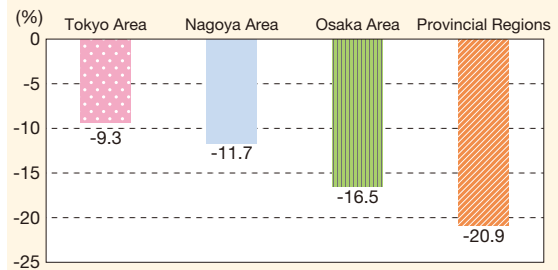
(Note) Numbers from before 1972 do not include Okinawa Prefecture. Numbers up to 2011 are exact figures; number for 2012 is an estimate.
 (Source) Developed by MLIT from: Ministry of Health, Labour and Welfare (MHLW) "Population Survey Report" (2012)

When changes in population are analyzed by regions, the rates of change for the population, including all ages from year 2010 to 2040 are estimated as follows: provincial regions -20.9%, Osaka area -16.5%, Nagoya area -11.7%, Tokyo area -9.3%. From this it is apparent that the sharp decline in population is far more prevalent in provincial regions, in comparison to the metropolitan areas^{Note} (Graphic 4, 5). The same can be said for the population of people in their 20's, with the sharpest decline in the provincial regions, followed by the Osaka area, Tokyo area, then Nagoya area. Of the population of people in their 30's, there is a noticeable decrease in numbers in the Tokyo area. However, this is thought to be related to the fact that the Second Baby Boom generation (born between 1971-1974)—the largest population group in comparison to previous generations—are aged 36-39 years old by year 2010, and that a large portion of this generation had moved to the Tokyo area by 2010. (The trend in the residing area of each generation will be further discussed in Chapter 2 Section 2.) Nevertheless, in every region, the rates of decline for the population of people in their 20's and 30's are higher than the rate of decline in all ages. From this, we can discern that as the general population decline continues, the population of younger generations will decrease rapidly (Graphic 6, 7, 8, 9).

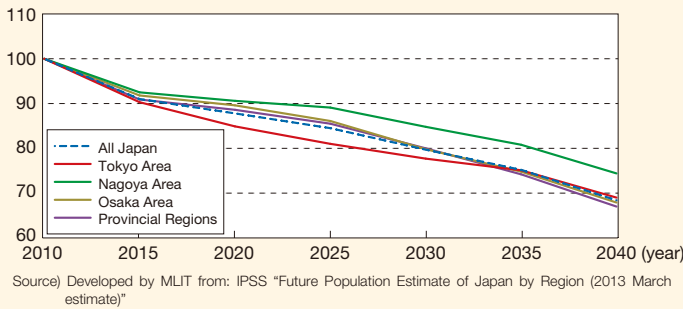
Graphic 4 Population Trend by Region (All Ages) (Year 2010=100)



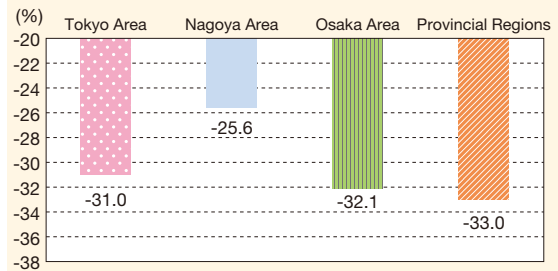
Graphic 5 Rate of Change in Population by Region (All Ages) (Year 2010 → 2040)



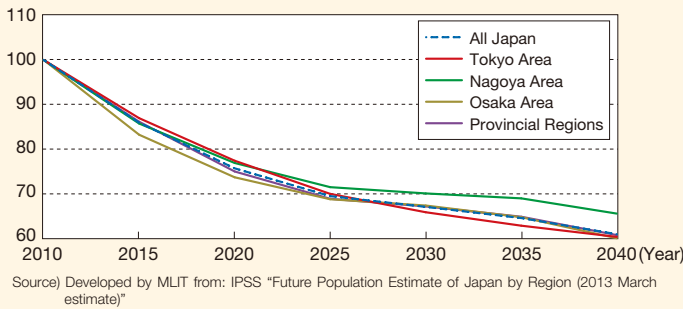
Graphic 6 Population Trend by Region (Age: 20's) (Year 2010=100)



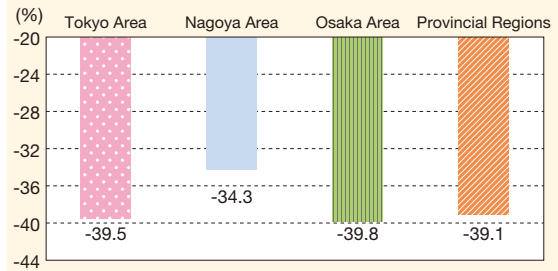
Graphic 7 Rate of Change in Population by Region (Age: 20's) (Year 2010 → 2040)



Graphic 8 Population Trend by Region (Age: 30's) (Year 2010=100)

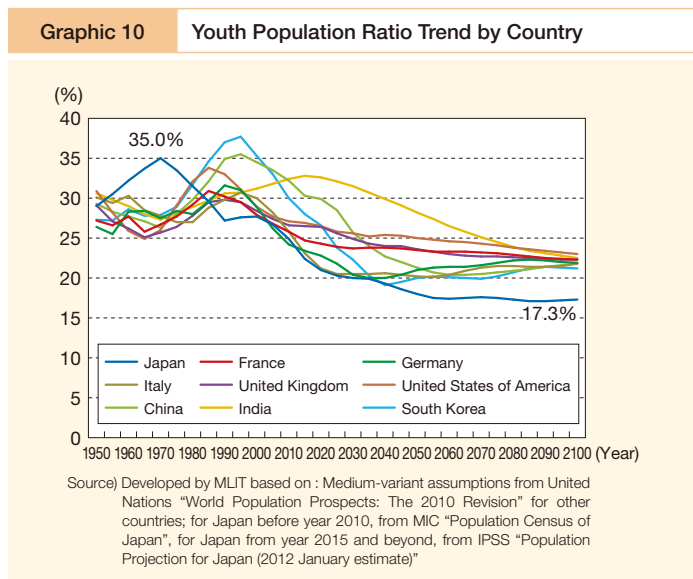


Graphic 9 Rate of Change in Population by Region (Age: 30's) (Year 2010 → 2040)



Note Unless otherwise noted, in this white paper "Tokyo Area" includes Saitama, Chiba, Tokyo, and Kanagawa prefectures, while "Nagoya Area" includes Gifu, Aichi, and Mie prefectures, and "Osaka Area" includes Kyoto, Osaka, Hyogo, and Nara prefectures. All three metropolitan areas combined shall be referred to as "three major metropolitan areas." "Provincial Regions" refers to all areas outside the three major metropolitan areas.

The population decline of Japan's younger generation is progressing very quickly, even from a global perspective. In Japan, the percentage of young people in the population grew since the 1950's until it peaked in 1970 at 35% of the population. Since then, the percentage of young people in the population rapidly decreased until 1990. From 1990 to 2005 the percentages levelled at around 27%, but then started to decrease again. It is estimated that by year 2035 the percentage of young people in the general population will drop below 20%, and steadily decrease over the long-term until year 2090. The population ratio of young people in other countries differ from Japan, in that the steady decline in the young population hit bottom in the latter half of the 1960's, then in the 1970's, while Japan's youth population went into decline, the other countries' young population began to grow, until right around the 1990's when it began to fall. Therefore, though the youth population in other countries are also estimated to continue to decline in the long-term, the estimates also show that in other countries the percentage of younger people in the population will converge in the first half of 20%, which shows that the speed and amount of decline is less acute, compared to the decline of the youth population in Japan (Graphic 10).



(Increase in One-Person/Couple-Only Households and Shrinking Households)

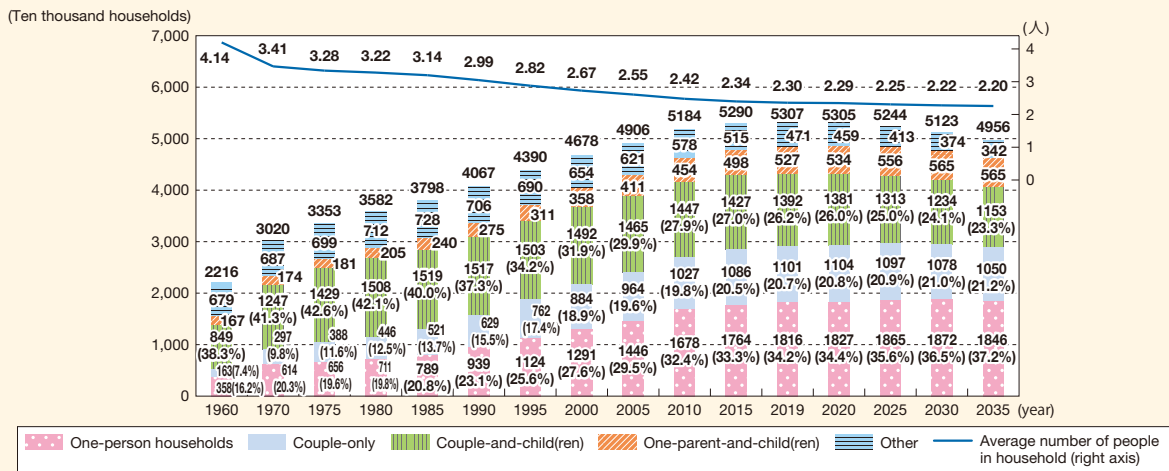
Along with population decline, falling number of birthed infants, and aging population, the household composition has also been changing. While Japan's total population started to decrease, the total number of private households has been steadily increasing, from 22.16 million households in 1960 to 51.84 million households in 2010. According to estimates calculated by IPSS, the total number of private households will continue to rise until it reaches its peak in year 2019 (53.07 households), and then begin to fall to where households will have declined to approximately 49.56 million by year 2035.

The rise in the number of households is largely due to the increase in one-person households, couple-only households, and one-parent-and-child(ren) households. One-person households have been consistently increasing since 1960, when it stood at 3.58 million households (16.4%). However, due to a rise in the number of senior citizens living alone, and a growing trend in people remaining unmarried or delaying marriage until later in life, the number of one-person households has been increasing at a faster rate since the 1990's. In 2010, the number of one-person households reached 16.78 million (32.4%), and though the total number of private households are expected to start falling by year 2020, the number of one-person households are expected to continue to rise, with an estimated 18.72 million (36.5%) one-person households by 2030. As for couple-only households, the number has continually increased, from 1.63 million (7.4%) households in 1960, to 10.27 million (19.8%) households in 2010. This number has been estimated to increase until year 2020, when it is expected to start falling. The percentage of a married couple only households within the total number of private households, however, is expected to continue to rise, from 19.8% in 2010, to 20.8% by 2020, and 21.2% by 2035.

Meanwhile, the number of households of couple-and-child(ren)—which at one time accounted for over 40% of the total number of private households—started declining after reaching its peak in 1985 with 15.19 million households. Hereafter this number is expected to decrease faster; with estimates calculating that from 14.47 million (27.9%) households in 2010, the number will fall to 11.53 million (23.3%) households by 2035.

In the current state of population decline, the changes in household composition and continued increase in the number of households indicate that households are shrinking, and that the average number of people in a household will continue to decrease over the long-term. The average number of people in a household in 1960 was 4.14 people, but in 2010 the average was 2.42 people, and by 2035 the average is expected to fall to 2.20 people per household (Graphic 11).

Graphic 11 Household Composition Trend (All Ages)

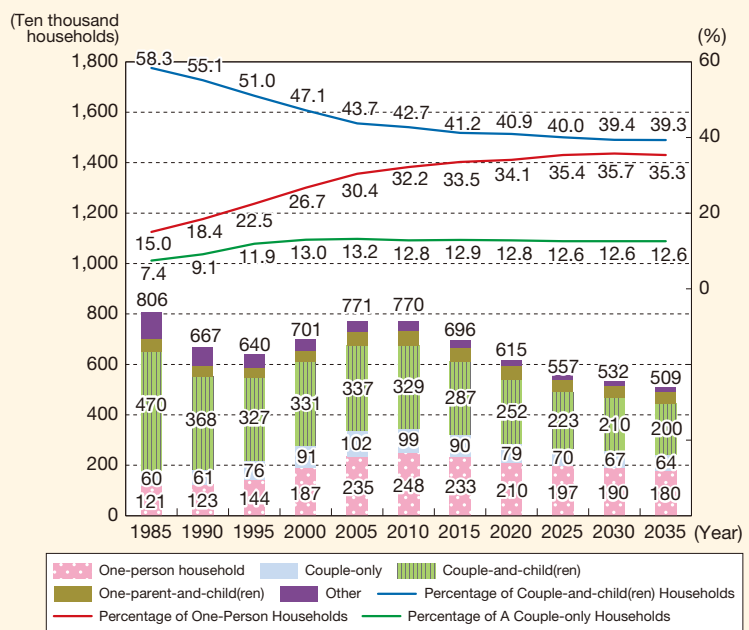


Source) Developed by MLIT from: for before year 2010, from MIC "Census", for year 2015 and beyond, from IPSS "Household Projections for Japan (2013 January estimate)"

In particular, the total number of private households where the head of household is in his or her 30's decreased from 8.06 million households in 1985 to 6.4 million in 1995. However, due to the Second Baby Boom generation going into their 30's, combined with the rise of one-person households, this number rose to 7.71 million households in 2005. Since then the number has been falling again, and by 2035 the number is expected to fall to 5.09 million households.

The characteristic trend in the household composition of people in their 30's is the declining percentage of households with couple and child(ren), and the growing percentage of one-person households. The number of households with couple and children went from 4.7 million households in 1985, then decreased to 3.27 million households in 1995. Then, the number started to grow until there were 3.37 million households in 2005. Since then the number has gone into a decline phase, and expected to fall to 2 million households by 2035. As apparent, households with couple and child(ren) has been following a pattern of rise and fall, but the percentage of such households within the total number of private households has been falling consistently, from 58.3% in 1985, to 51.0% in 1995, to 43.7% in 2005, until by 2035 it is estimated to be around 39.3%. On the other hand, the number of one-person households has been anticipated to reach its peak in 2010 with 2.48 million households and then begin to decline. However, in the long-term, the percentage of one-person households within the total number of general households is expected to be on the rise, from 15.0% in 1985, to 32.2% in 2010, and expected to increase to 35.3% by 2035 (Graphic 12).

Graphic 12 Household Composition Trend (Head of Household Age: 30's)



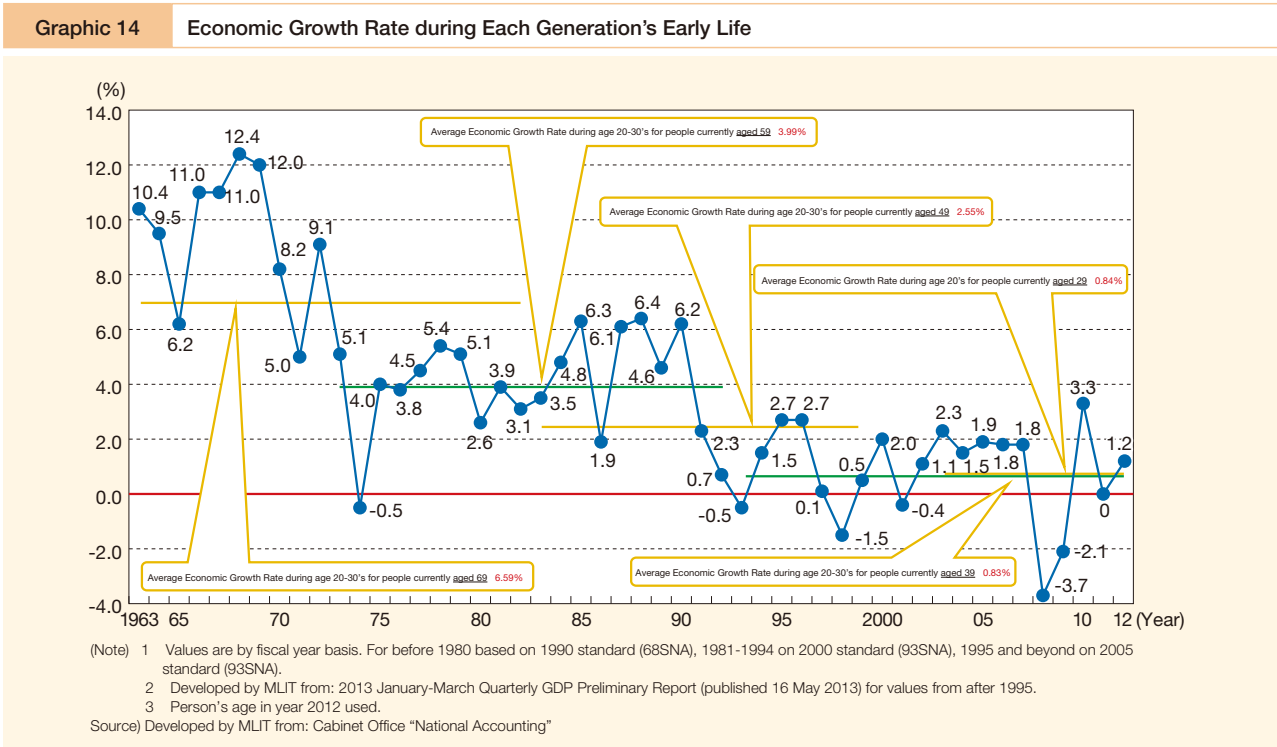
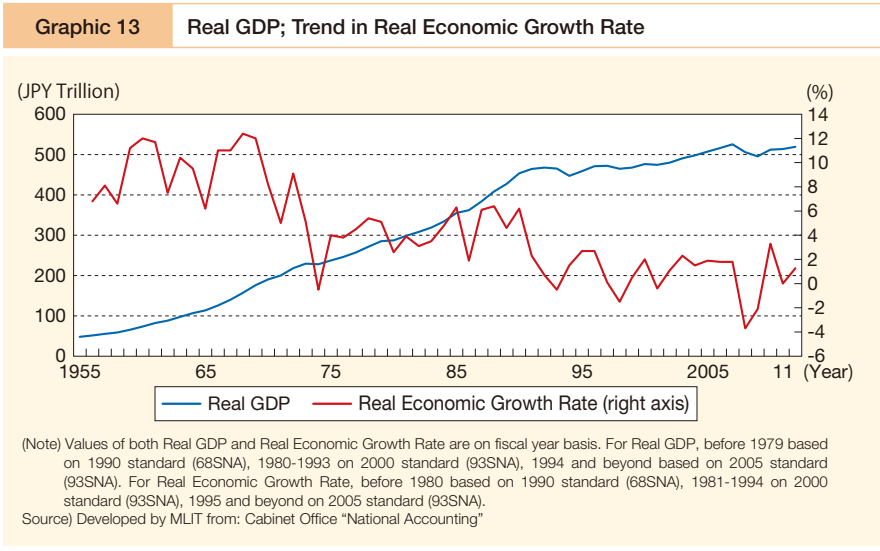
Source) Developed by MLIT from: for before year 2010, from MIC "Census", for year 2015 and beyond, from IPSS "Household Projections for Japan (2013 January estimate)"

(2) Long-term Economic Downturn (Downturn in Economic Growth Rate)

The economy of Japan saw major growth with post-war reconstruction after World War II and the high economic growth period, so that by the end of 1960's Japan stood as number 2 in global economic power. However, due to the economic bubble burst at the beginning of 1990, the real economic growth rate which was at 6.4% in 1988, dropped to -0.5% by 1993, resulting in a major drop in Japan's economic growth

compared to previous times. From 2002, Japan seemed to be going into a long-term economic expansion process. Then in 2008, due to the impact of the global economic downturn triggered by the collapse of Lehman Brothers, Japan was pushed into negative economic growth, and since then the Japanese economy has continued to experience low growth (Graphic 13).

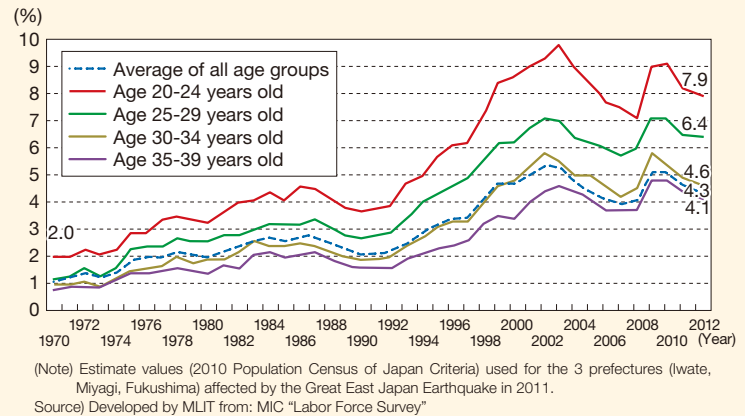
How has the population of young people experienced these changes in macro economy? When looking at the economic growth rate experienced during early life by each generation, it is evident that the current generation of young people have been experiencing a lower economic growth rate than those of the previous generations. The average economic growth rate that people experienced in their 20's and 30's is as follows, according to the person's age in 2012: 6.59% for people aged 69 (born 1943), 3.99% for people aged 59 (born 1953), 2.55% for people aged 49 (born 1963), 0.83% for people aged 39 (born 1973), and 0.84% for people aged 29 (born 1983). Basically, the closer it gets to recent years, the lower the average rate of economic growth seems to become (Graphic 14).



(Rise in Unemployment Rate)

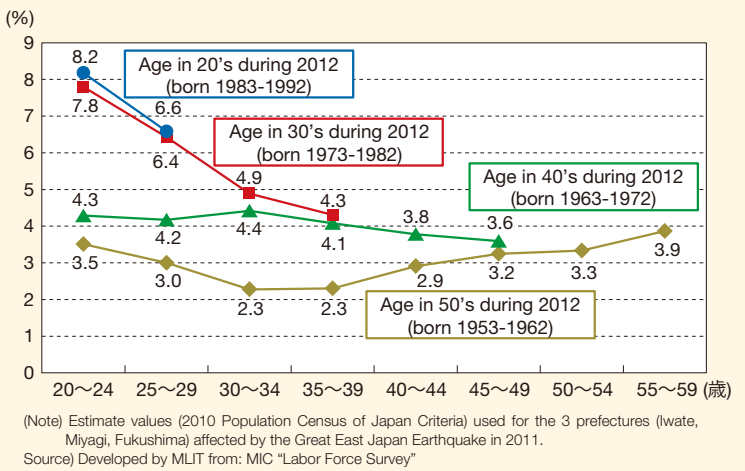
Next, we will look at the trend in unemployment rate. Though unemployment rate has been rising for every age group, the unemployment for people aged 20-24 years old has especially seen a steep rise. In 1970, the unemployment rate for this age group was 2.0%, while in 2012 it was 7.9%. The current population of young people is facing a much higher level of unemployment compared to previous generations (Graphic 15).

Graphic 15 Trend in unemployment rate in young people



When the unemployment rates experienced by each generation are broken down into age groups, then compared at the same age point, one can see that the younger generations are experiencing increasingly higher unemployment rates. For example, at the 20-24 years old age point, the unemployment rate for the generation born within 1953-1962 was 3.5% unemployment, 1963-1972 generation was 4.3%, 1973-1982 generation was 7.8%, and 1983-1992 generation was 8.2%. So although unemployment rates at 25-29 years old, and 30-34 years old age points are generally lower for every generation when compared to the 20-24 years old age point, the younger generations are still experiencing higher levels of unemployment rates at each age point (Graphic 16).

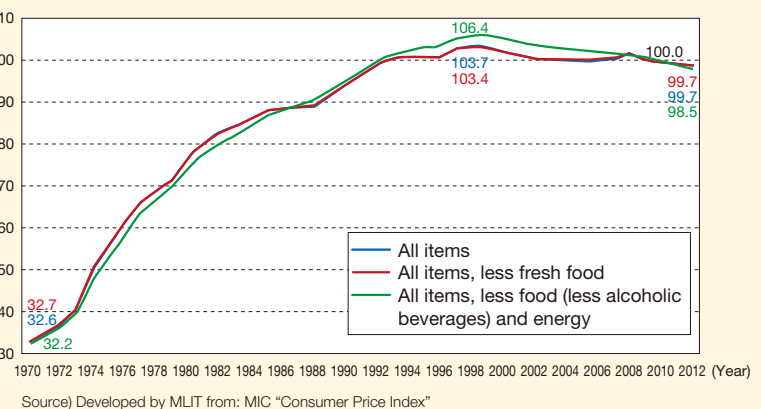
Graphic 16 Trend in Unemployment Rates by Generation



(The Procession of Deflation)

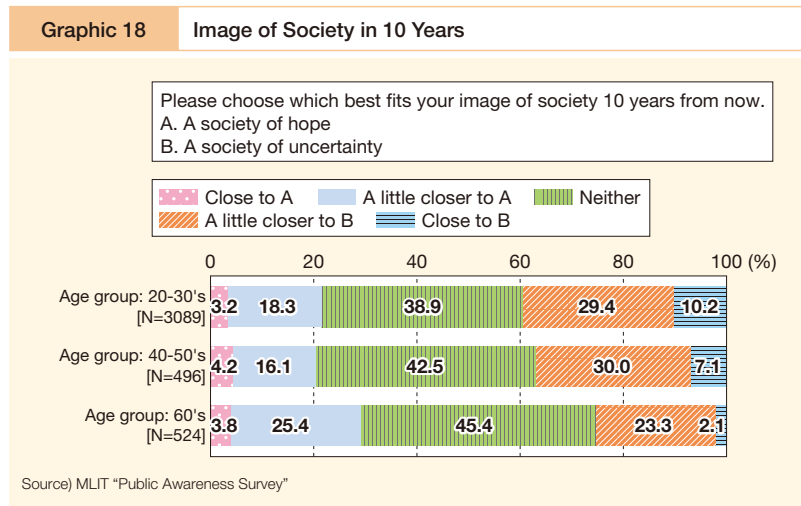
In regards to the trend in price levels, from 1970 there has been a long-term rise in price levels, which reached its peak in 1998 and then began to fall. Since price levels have been steadily dropping from 1999 through 2012, the current generation of young people will have spent most of their early life in the deflation period (Graphic 17).

Graphic 17 Trend in Consumer Price Index (Entire Country) (Year 2010=100)



Due in some part to the effect of this difficult economic situation, when MLIT asked a question regarding the "image of society 10 years from now" in the Public

Awareness Survey (hereinafter referred to as “Public Awareness Survey”)^{Note} conducted in March 2013, the percentage of young people who answered, “A society of uncertainty,” or “A dark society” was higher than that for other age groups (Graphic 18).



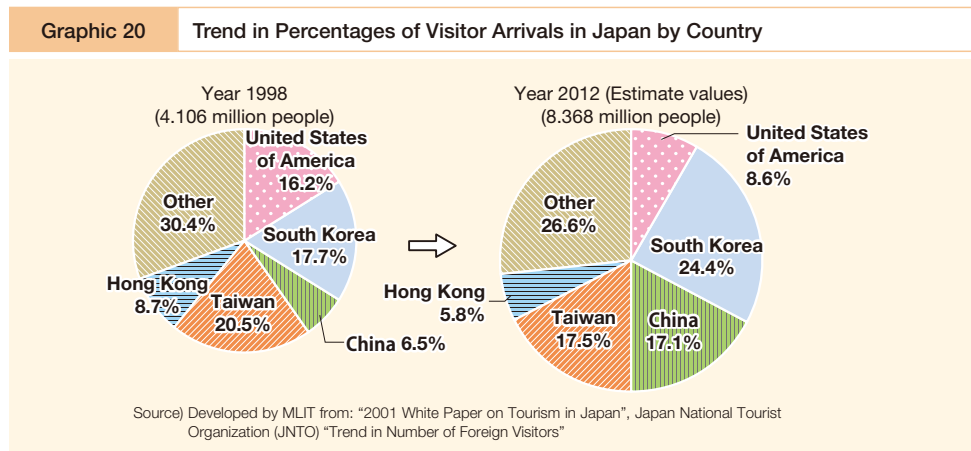
(3) Internationalization

As interactions between national economies strengthen, and modes of transportation and information and communication technology continue to advance, the transnational movement of people, goods, services, capital, and information has become more and more active.

(Surge in Travelling and Logistics)

As regards the movement of people, the number of visitor arrivals in Japan has seen long-term increase; recent levels have reached over 8 million visitors (Graphic 19).

Out of these visitors, the percentage of visitors from the USA has been decreasing, while that of visitors from China has more than doubled, having gone from 6.5% in 1998 to 17.1% in 2012 (Graphic 20).



Note The survey was conducted in March 2013 using the internet, targeting men and women aged 20-69 years old nationwide and received 4,109 responses. Allocations were done according to actual population ratios in order to prevent bias resulting over region and/or gender.

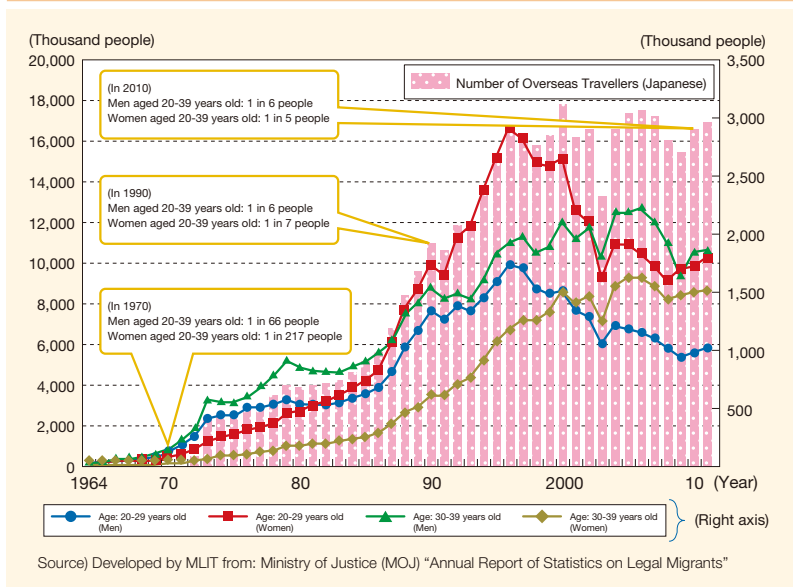
The trend in the number of Japanese people travelling overseas has been steadily increasing since 1964, when overseas travel—which until then had been restricted to business trips or studying abroad—was opened up to sightseeing trips. In particular, there was a sharp increase from the latter half of 1980’s to the 1990’s, and for the first time, the number of people going abroad reached over 10 million people. Since then, there have been temporary dips in numbers, due to reasons such as the terrorist attacks on the USA on September 11, 2001, and the SARS outbreak and war against Iraq in 2003. However, in general, the level has been progressively increasing, having reached roughly over 15 million people travelling abroad in recent years (Graphic 21).

In addition, from the 1990’s in to 2000’s, there has been a major increase in the number of Japanese students that enrolled in a university overseas. Though the numbers have dropped off in the recent years, within the youth population (aged 18-29 years old) there is still a high number of people—3.7 people out of 1000—that study abroad (Graphic 22).

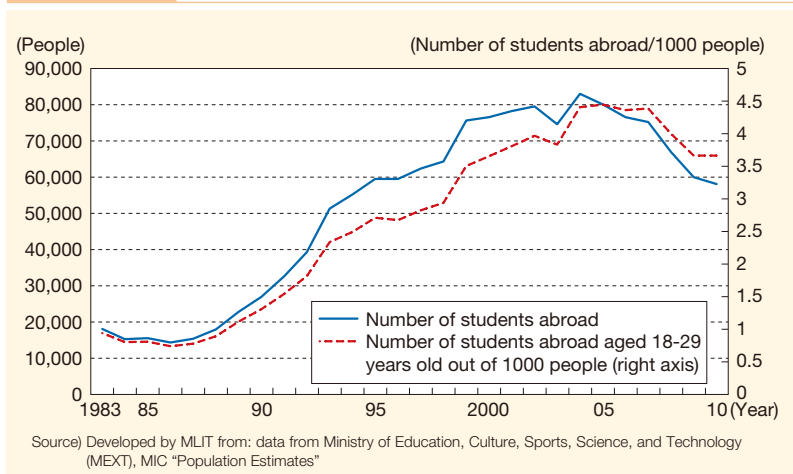
The movement in goods show, when looking at the trade situation with foreign countries, that Japan’s export trade in 1960 was in the range of approximately JPY1.5 trillion, and import was around JPY1.6 trillion. However, from 1973 both import and export climbed to JPY10 trillion ranges, and by 1980 both had expanded into the JPY30 trillion range. In 2012, export trade is in the JPY64 trillion range, and import is in JPY71 trillion range (Graphic 23).

In terms of trade partners, for a long time USA was Japan’s number one trade partner, but in 2002, China has surpassed the USA, and since then has been Japan’s number one trade partner (Graphic 24).

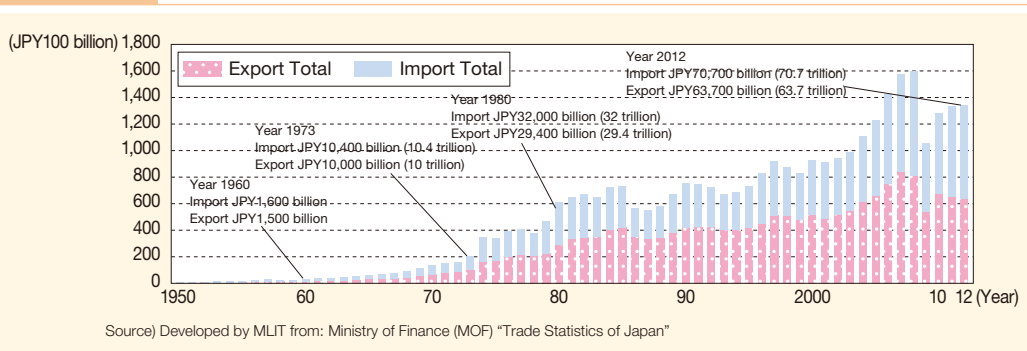
Graphic 21 Trend in Number of Japanese Travelling Abroad



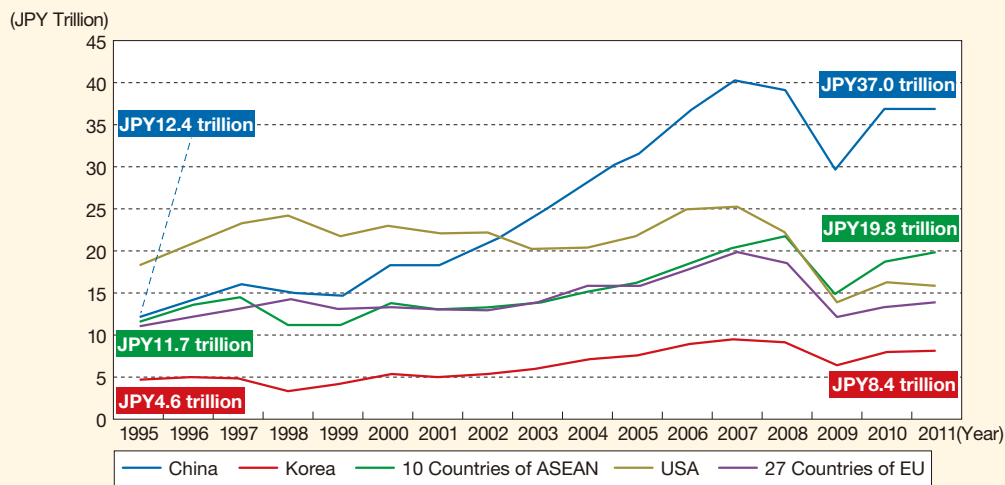
Graphic 22 Trend in the Number of Japanese Studying Abroad



Graphic 23 Trend in Import and Export Totals of Japan



Graphic 24 Trend in Total Trade from 1995-2011 by Trade Partner Countries

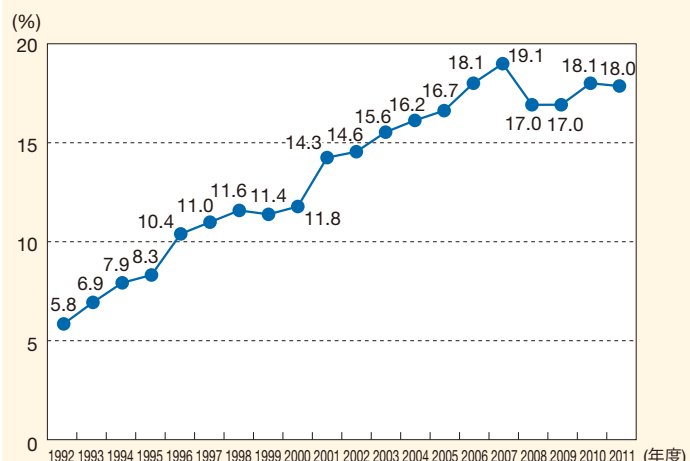


Source) Developed by MLIT from: MOF "Trade Statistics of Japan"

(Structuring an International Division of Labor)

The movement of capital has been changing as international competition intensified. In manufacturing, more and more production bases have been setup overseas in order to create the best division of labor on a global scale possible. The overseas production ratio (obtained by dividing sales of overseas affiliates by the sum of domestic corporation sales and sales of overseas affiliates) has been growing, with 18.0% in 2011 (Graphic 25).

Graphic 25 Trend in Overseas Production Ratio (Manufacturing)



(Note) Overseas Production Ratio = Sales of overseas affiliates (Manufacturing) / Sales of overseas affiliates (Manufacturing) + Domestic Corporation Sales (Manufacturing)

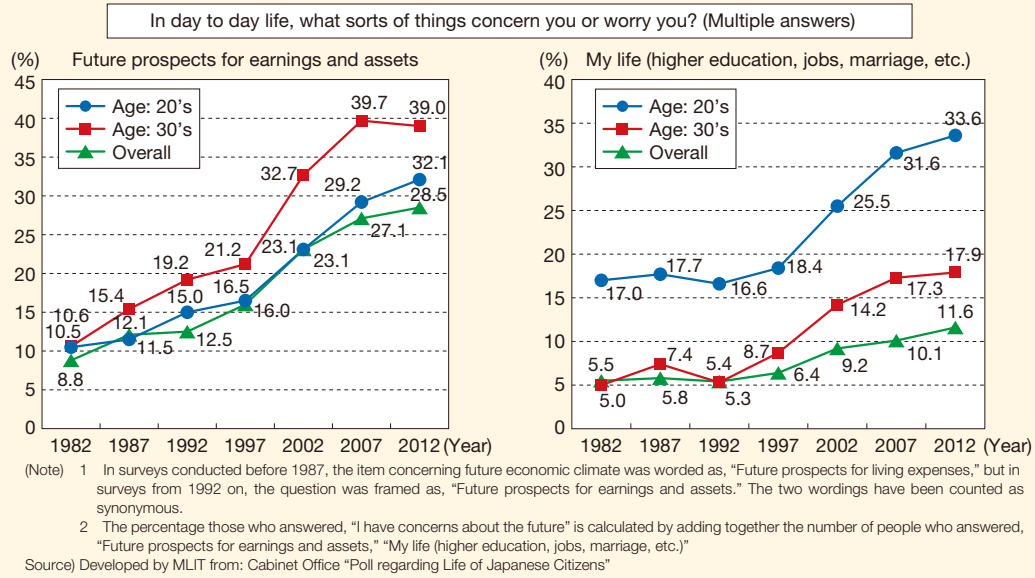
Source) Developed by MLIT from: MOF "Financial Statements Statistics of Corporations by Industry", Ministry of Economy, Trade, and Industry (METI) "Basic Survey of Overseas Business Activities"

Section 2 Change in Mentality of Young People

(1) Growing Concern towards the Future

With the difficult economic climate of rising unemployment rates and stagnant economic growth, the number of young people that are concerned and worried about their futures is a much higher today than in previous generations. Although the number of people who have economic concerns—such as, "Current and/or future prospects for earnings and assets," or anxiety regarding pursuit of higher education, availability of jobs, prospect of marriage, and other concerns in life—are rising in all age groups, the number is especially high in the younger population (Graphic 26).

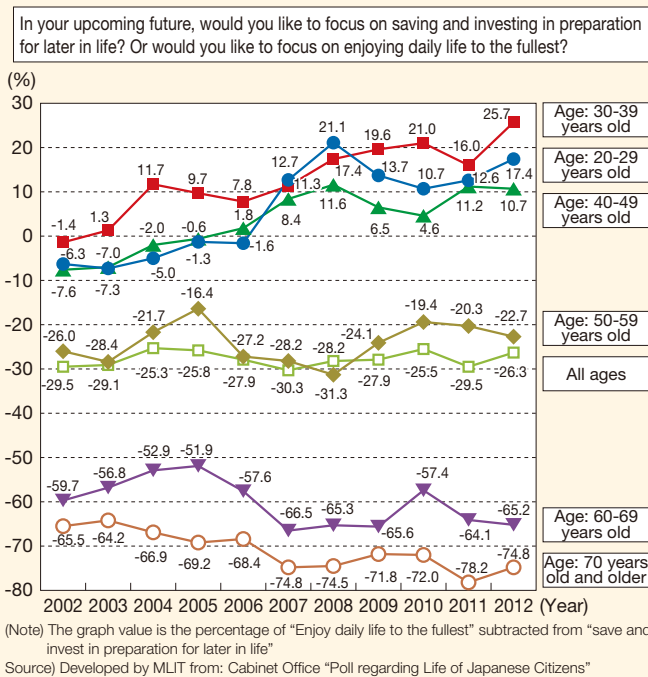
Graphic 26 Worries and Concerns about the Future



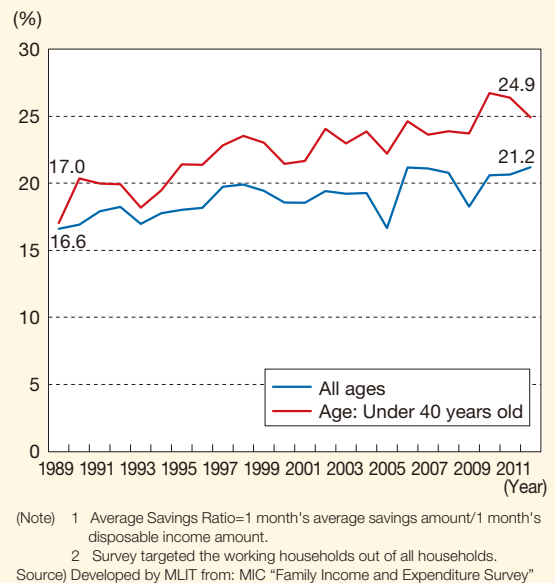
(2) Heightened Mentality of Provident Preparation for the Future

The concerns regarding the future of the economic situation has created a mentality of "preparing for the future," and this mentality has become apparent in behaviour. The percentage of young people whose want to focus their lives on, "Saving and investing in preparation for later in life" instead of, "Enjoy daily life to the fullest," is higher than in previous generations of young people. Even when comparing the average savings ratio per household, the number has gone from 16.6% in 1989 to 21.2% in 2012, a 4.6 jump. For households of people younger than 40, the number has gone from 17% in 1989 to 24.9% in 2012, a 7.9 jump (Graphic 27, 28).

Graphic 27 Mentality regarding the Future

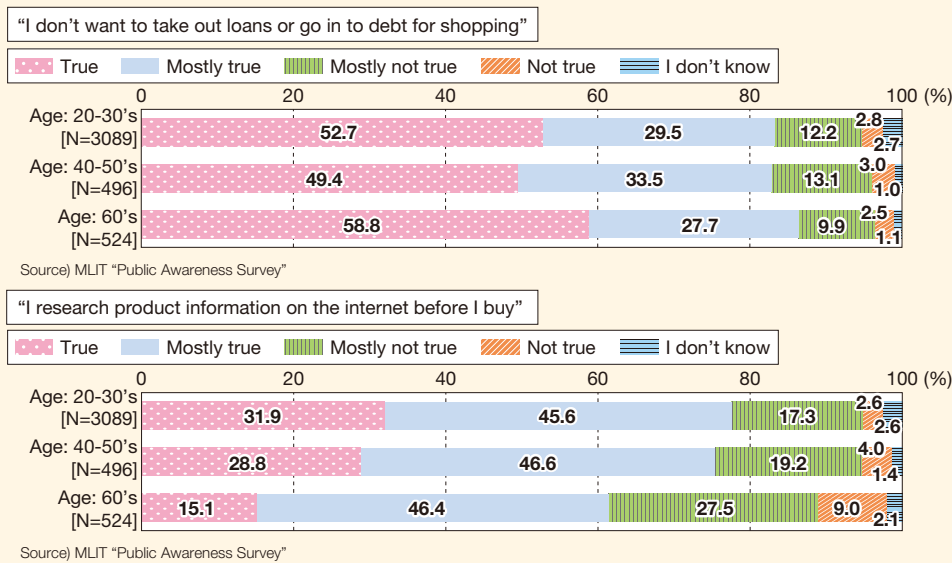


Graphic 28 Average Savings Ratio per Household (Propensity to save)

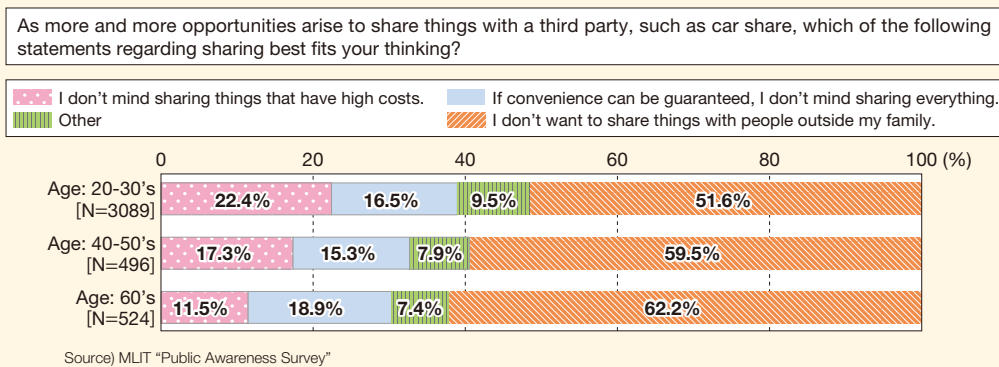


Even in regards to consumption—the flip-side of saving—the mentality of controlling spending is apparent. From the fact that a high percentage of over 80% people think, “I don’t want to take out loans or go in to debt for shopping,” and that the percentage of people who answer, “I research product information on the internet before I buy” is higher among people in their 20’s and 30’s, we can see that people do not want to spend beyond their means, and that they use the internet to efficiently collect information before spending money (Graphic 29). In addition, regarding things that can be shared with other people, the percentage of young people who think, “I don’t mind sharing things that have high costs” is higher than other age groups. It is apparent that by not insisting on having one’s own things, they are trying to keep costs down (Graphic 30).

Graphic 29 Values regarding Consumption



Graphic 30 Mentality regarding Sharing



(3) Increase of People Who are Satisfied with Life

Although the current generation of young people are controlling their spending in order to prepare for future needs, this does not mean they have low levels of satisfaction with their lives.

Compared to previous generations, the environment in which the current generation of young people grew up is far more materially comfortable. Since the latter half of the 1950’s, consumer goods that had not previously existed were brought, one after another, into Japan’s households. Beginning in later 1950’s, the three consumer electronics, known as “the three sacred treasures,” the black-and-white television, washing machine, and refrigerator began to appear in homes; then in later 1960’s the “new three sacred treasures,” the colour television, passenger automobile, and air conditioner also became popularized.

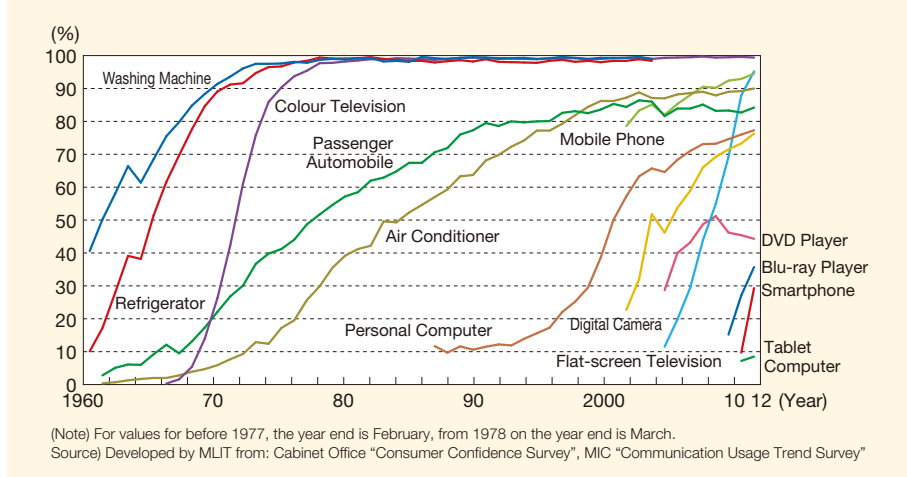
In view of the fact that by the 1980’s, basically 100% of all households had a refrigerator, a washing machine, and a

colour television, for the current generation of young people, having these things is a given. In addition, taking into account the advent of smartphones, tablet computers, and other new products in recent years, plus the variety and quality of consumer goods, and considering how normal it is to possess such things, from a material prospective, Japan's affluence is continuing to increase (Graphic 31).

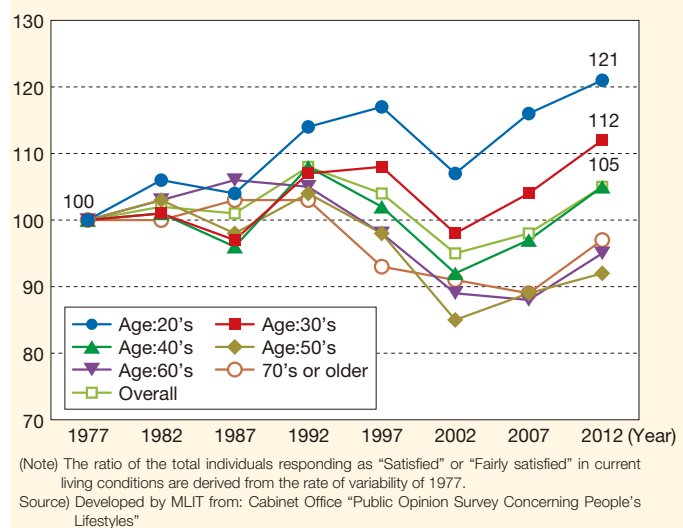
Perhaps it is a reflection of such circumstances that the percentage of young people that are satisfied with their lives is rising. According to the "Poll regarding Life of Japanese Citizens," the percentage of people in their 20's and 30's who, when asked regarding their current lifestyle answered, "Satisfied," or, "Fairly satisfied," is on the rise, whereas in other age groups the percentage has levelled off or declined. In fact, in 2012 the said percentage of young people who are satisfied with their lives was at the highest it had been in the last 30 years (Graphic 32).

Moreover, when asked, "Do you think, 'I don't want to lower my standard of living from where it is now'?" the percentage of young people who answered "Definitely yes" was higher than in other age groups (Graphic 33).

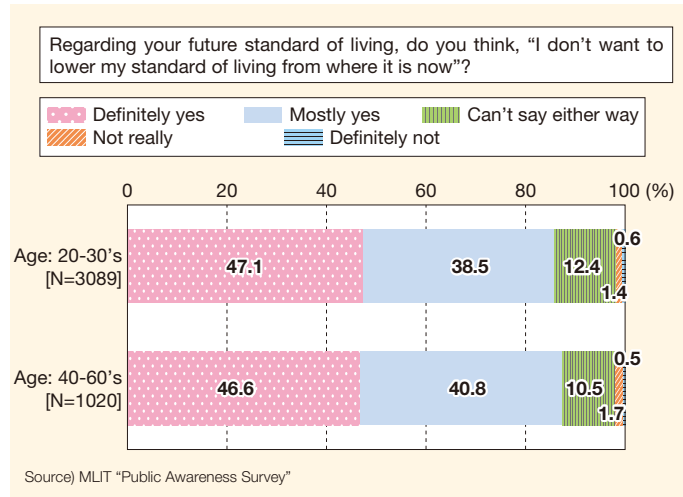
Graphic 31 Trend in Popularization of Durable Goods



Graphic 32 Trend in the Life Contentment (Year 1977 = 100)



Graphic 33 Preference for Future Standard of Living



Chapter 2

Changes in the Day-to-Day Life of Young People

Section 1 Change in Working

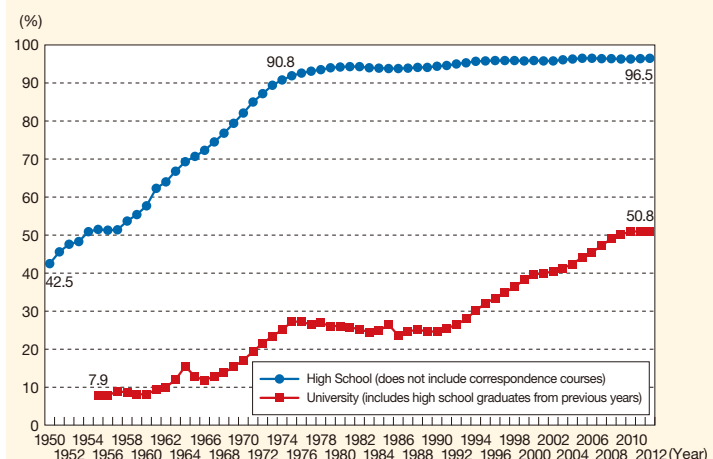
Due to the decline in Japanese economy, the employment situation for young people has become very difficult; with rising unemployment rates, as mentioned in the previous section. In this section, we will examine the changes in the employment situation of young people by analyzing the progressive popularization of higher education, trends in career paths after graduation, and changes in employment systems and incomes. We will also look at changes in the young people's attitude towards working and the employment status of women, to analyze the changes in the employment situation of young people that relate to the industries of Land, Infrastructure, Transport and Tourism.

(1) Changes in the Employment Situation (Popularization of Higher Education)

Despite the declining population of those above 18 years old due to dwindling birth rates, the high school and university enrollment rates are continuing to rise. High school enrollment rates first reached above 90% in 1974, and in recent times has been at close to 100%. University admissions increased from the 1960's until mid-1970's, then later started to rise again in the 1990's; in 2012, 50.8% (the majority) enrolled in university (Graphic 34). This decrease in the young population and popularization of higher education has been affecting employment trends of new graduates. When looking at the employment numbers of new graduates, there was a peak in 1966 with over 1.6 million employed, while in 2011 the number has decreased to approximately 0.63 million. When looking at the trend in employment by education level, in the 1950's the main population of new graduates who found employment were those that graduated from the 9th grade. This shifted to high school graduates being the main population of new

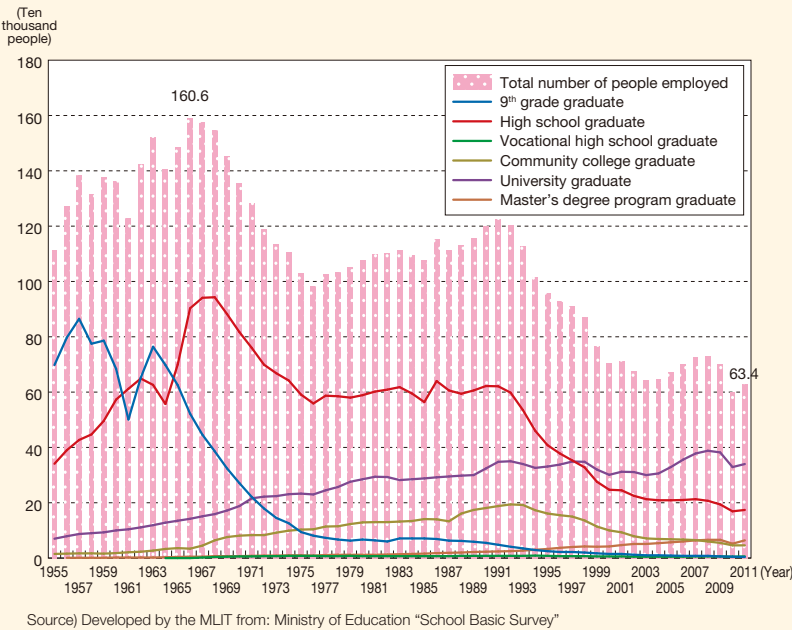
graduate employees in the 1960's, and since then the number of people that found employment after graduating 9th grade decreased rapidly. In the 1990's, as the number of university admissions rose, the number of high school graduates who found employment decreased significantly. In 1998 the number of university graduates who found employment exceeded that of high school graduates (Graphic 35). By 2010, the majority of those who found employment were university graduates, at 54.3%. Recently, the number of people who found employment that also have a Master's degree has been increasing, showing that the new graduates who find employment have increasingly higher education (Graphic 36). From this, we can surmise that because the percentage of people who formerly would have started working after graduating 9th grade or high school are now continuing on in their education to pursue college degrees, there has been a developing diversification in the career paths of college graduates.

Graphic 34 High School and University Enrollment Trends

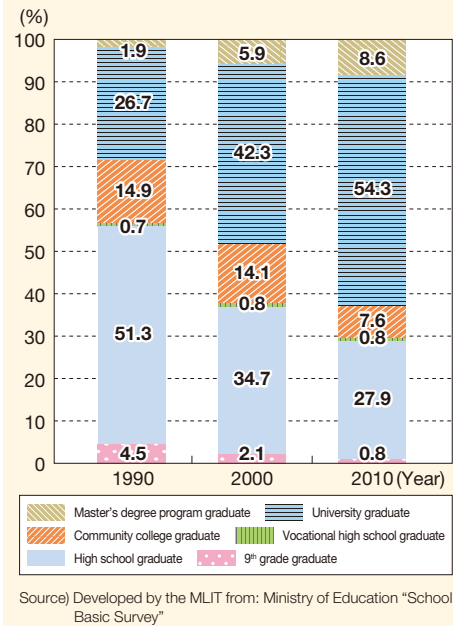


(Note) 1. High School Enrollment Rate: Percentage of people who enrolled in regular or special courses in a high school, a senior division of a secondary school, a school for students with special needs, or a vocational high school after graduating from 9th grade or from a secondary education school term course (includes those who advanced to employment; does not include 9th grade graduates from previous years).
2. University (undergraduate) Enrollment Rate (includes high school graduates from previous years): Obtained by dividing the number of people admitted into a university undergraduate program (includes high school graduates from previous years) by the total number of people who graduated from 9th grade 3 years ago or the junior division of a secondary school.
Source) Developed by MLIT from: Ministry of Education "School Basic Survey"

Graphic 35 Trends in People Employed by Educational Background



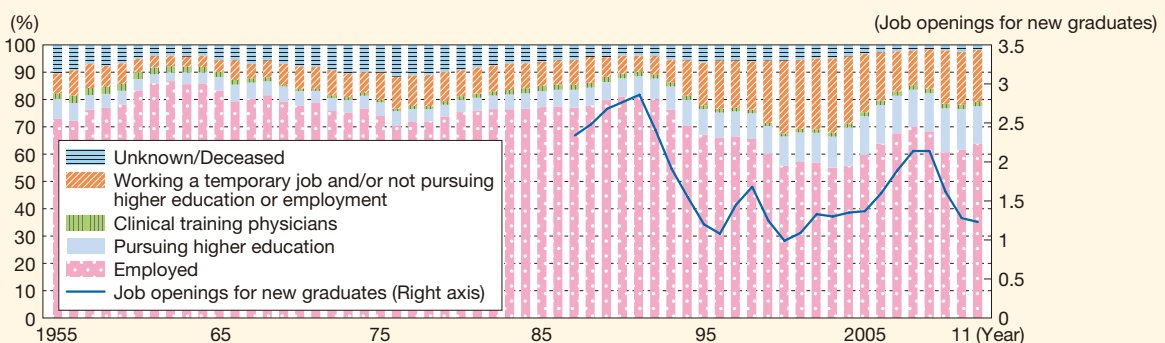
Graphic 36 Trend in Percentage of People Employed by Educational Background



(Decrease in Employment Rate of University Graduates)

If we look at the career paths of university graduates after graduation, we can see that until the beginning of the 1990's the percentage of people that found employment after graduation was 70-80%. However, since the Japanese economic bubble burst, this percentage has been declining. From 81% in 1991, the percentage dropped to 56% by 2000. From 2001 things started to improve, until in 2008, when the Lehman shock hit. Since then, finding employment has again become difficult (Graphic 37).

Graphic 37 Career Paths after Graduating University



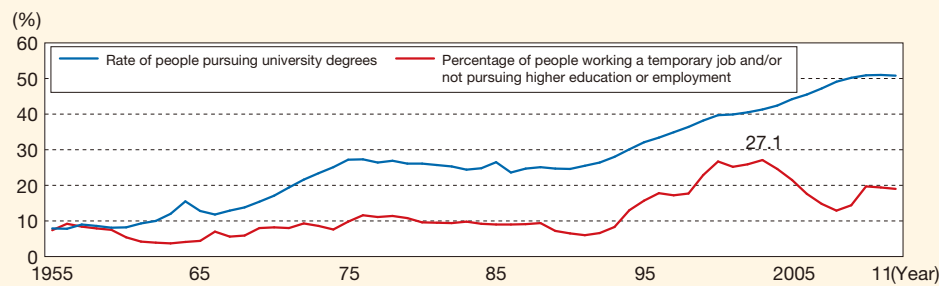
(Note) 1 For the figures up to 2003, people who were "Enrolled in advanced vocational school/enrolled in school overseas" were included in "Working a temporary job and/or did not pursue higher education or employment". From 2004 and beyond, people who were "Enrolled in advanced vocational school/enrolled in school overseas" are included in "Pursuing higher education".
 2 "Working a temporary job" refers to people who found a job that provided income for a limited term.
 Source) Developed by MLIT from: Ministry of Education "School Basic Survey"; Recruit Works Institute "Survey of Job Offer-to-Job Application Ratio for University Graduates"

Meanwhile, since the economic bubble burst, the percentage of people who were "Working a temporary job and/or not pursuing higher education or employment" after graduating college rose, as employment rates dropped. This number hit its peak in 2003, at 27.1%. Increase in the number of people who either find a temporary job or do not pursue higher education or find employment has been thought to be directly connected to the economic climate and employment situation at the time of graduation. As such, the difficult employment situation (low number of job openings) rose around the early 2000's and again in later 2000's. Further, from the fact that, from the 1960's to the late 1970's, as well as the

1990's, the number of people that either found temporary work and/or did not pursue higher education or employment rose at the same time as the number of people enrolling in university rose, it seems that the job market has become increasingly competitive among university graduates (Graphic 38).

Graphic 38

Rate of people pursuing university degrees, Percentage of people working a temporary job and/or not pursuing higher education or employment



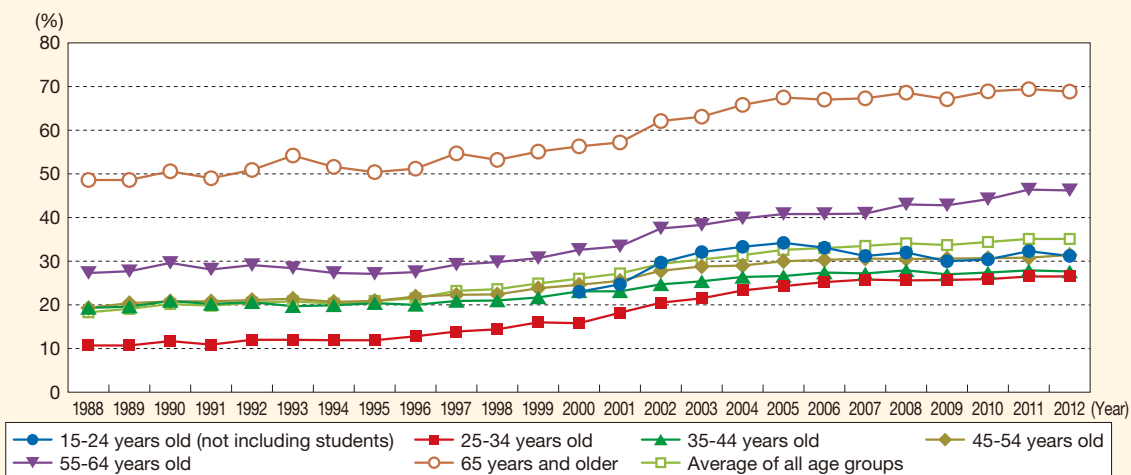
(Note) 1 For the figures up to 2003, people who were "Enrolled in advanced vocational school/enrolled in school overseas" were included in "Working a temporary job and/or not pursuing higher education or employment". From 2004 and beyond, people who were "Enrolled in advanced vocational school/enrolled in school overseas" are included in "Pursuing higher education".
2 "Working a temporary job" refers to people who found a job that provided income for a limited term.
Source) Developed by MLIT from: Ministry of Education "School Basic Survey"

(Rise in Percentage of Non-regular Employment)

Next, we will look at the changes in the type of employment found by the people who found employment. When the trend in the percentage of people who found non-regular employment is compared by age groups, the percentage of non-regular employment seems to be growing in the long-term. In particular, for the 15-24 year old age group, there is significant rise in the number from mid-1990's when the economic bubble burst, until the mid-2000's (Graphic 39).

Graphic 39

Trend in Percentage of Non-regular Employment by Age Group



(Note) 1 The percentages are derived from the total of "Permanent/regular employee" and "Temporary/non-regular employee".
2 The figures for 15-24 years old age group that does not include students is from year 2000.
3 In regards to "Temporary/non-regular employee," the figures for 2008 is a total from "Part-time or temporary part-time job worker," "Dispatched worker from temporary labour agency," "Contract employee and Entrusted employee" and "Other." Figures for years 2009 and beyond are aggregates from this newly created item. Further, because the results from years 2009 and 2010 were replaced on May 17, 2011, the some of the figures may differ from the numbers that had been previously released. Due to this, the percentages for "Permanent/Regular employee" and "Temporary/Non-regular employee" for years 2009 and 2010 have also been re-calculated and replaced.
Source) Developed by MLIT from: MIC "Labor Force Survey"

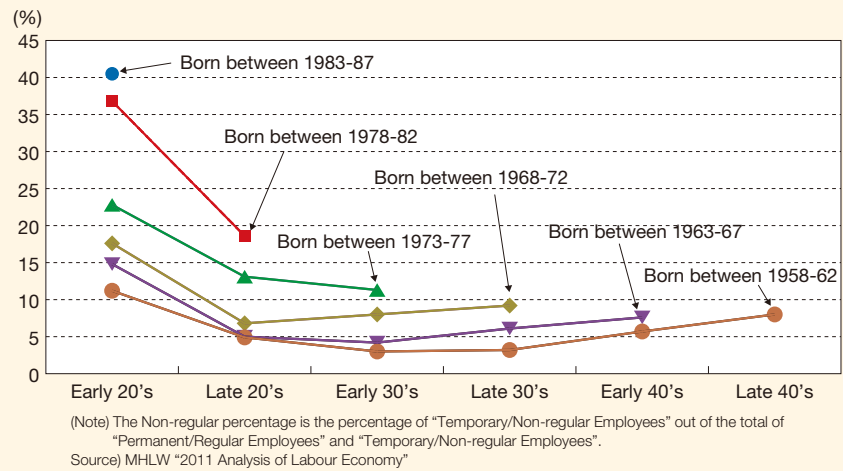
When analysing the non-regular employment percentage by different age groups, the percentage of men in their early 20's in non-regular employment has been continually rising; the increase is especially significant in generations born after 1970. In each age group, there is a temporary drop in the percentage of non-regular employment from early 20's to later 20's, which shows that after working in non-regular employment, people transition into finding regular employment. For the generation born between 1978-1982, there was a large drop in non-regular employment from early 20's to late 20's, yet the percentage of people in non-regular employment is still higher than in any other generation (Graphic 40).

On the other hand, for women, by and large, the percentage of women in their early 20's in non-regular employment is low, but as they get older, the percentage of non-regular employment rises. However, for the generation born between 1978-1982, the percentage of women in their early 20's in non-regular employment is high, but gradually decreases in their later 20's. As the participation of women in society advances, it seems there are more women who want to work as a permanent employee. However when looking at the percentages by generation, for women born after 1970, the percentage of women in their early 20's in non-regular employment show a large increase, as with the men of the same generation (Graphic 41).

The number of young, unemployed people (15-34 years old population not in the labor force, not engaged in housework or schooling), referred to in Japanese as a "Freeters (job-hopping part-timers)" or "NEETs (Not in Education, Employment, or Training)" person, are also increasing. The number of "Freeters" saw a huge increase after the economic bubble burst, and in 2003 the number of "Freeters" reached 2.17 million. In the following five years this number began to decrease, but after the Lehman shock in 2009, the number started increasing again, hitting 1.8 million in 2012 (Graphic 42). The number of "NEETs" has been increasing since 2002, when it was over 0.6 million people. In 2010 there was a slight drop in the number, but in 2012 the number increased again to 0.63 million (Graphic 43).

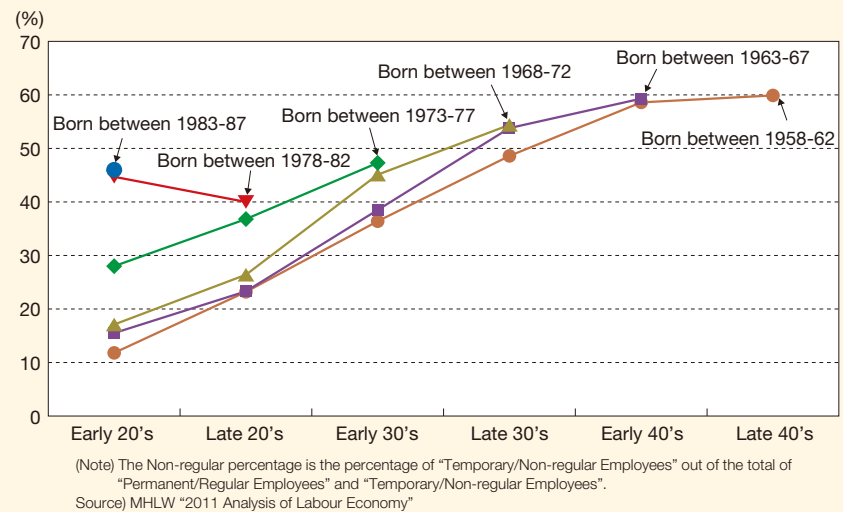
Graphic 40

Trend in Percentage of People in Non-regular Employment by Generation (Men)

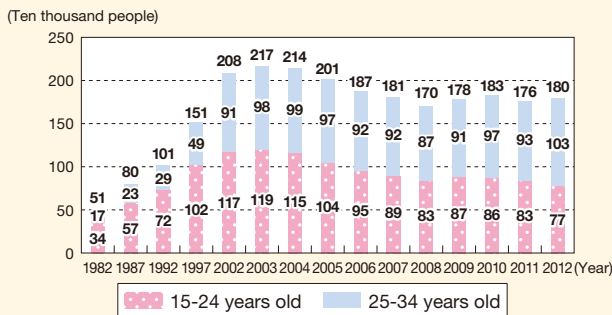


Graphic 41

Trend in Percentage of People in Non-regular Employment by Generation (Women)

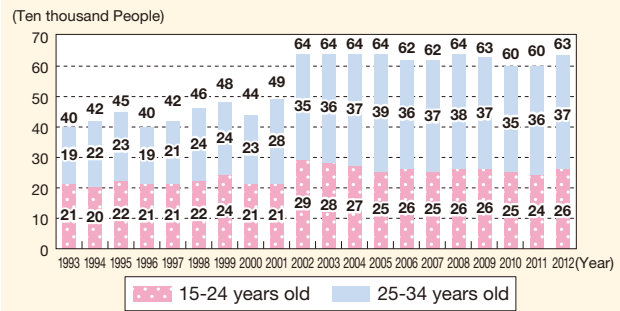


Graphic 42 Trend in Number of "Freeter" People



(Note) 1 For years 1982 to 1997, the definition for "Freeters" was limited to 15-34 years old, [1] people working in jobs that are termed "Part-time" or "Temporary part-time" whose years of continual employment was less than 1-5 years for men, and women who were unmarried that mainly worked, [2] for people not working, those that wanted a "Part-time or temporary part-time" job.
 2 From year 2002, the definition for "Freeters" was a 15-34 year old person, who were men that have graduated, or women that have graduated and are unmarried, [1] people working in jobs that are termed "Part-time" or "Temporary Part-time," [2] for those completely unemployed who were looking for "Part-time or temporary part-time" work, [3] for those not part of the labor force but wanted a "Part-time or temporary part-time" job, and "Others" who are not engaged in housework, schooling, or receiving job offers.
 3 Please note that since the definition of "Freeters" for years 1982 to 1997 is slightly different from the definition from 2002, there may be a disconnect in the figures.
 4 The figures of 2011 do not include numbers from the Iwate, Miyagi, or Fukushima prefectures.
 Source) Developed by MLIT from: MIC "Labor Force Survey"

Graphic 43 Trend in Number of Young Unemployed People

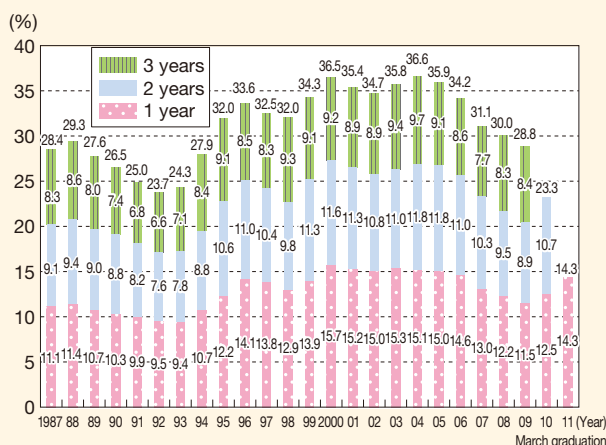


(Note) 1 The definition of young unemployed people is limited to people 15-24 years old, that are not part of the labor force, and not engaged in housework or schooling.
 2 The figures of 2011 do not include numbers from the Iwate, Miyagi, or Fukushima prefectures.
 Source) Developed by MLIT from: MIC "Labor Force Survey"

(High Levels of Personnel Turnover Trend)

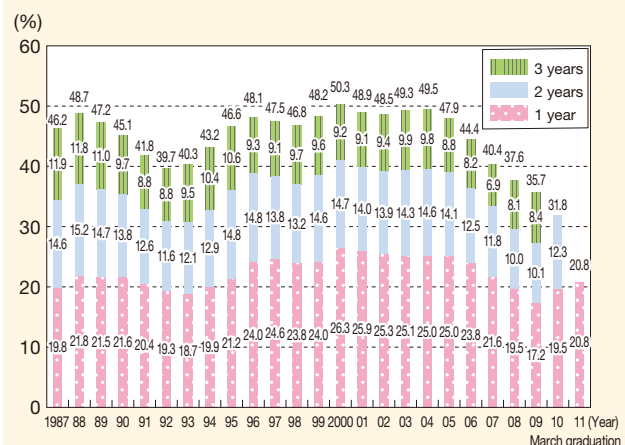
Among people who find employment, there are many that quite their jobs. When looking at the rate of university graduates who quit their job within their first three years of employment, the numbers rose after the economic bubble burst, and after 1995 the percentage continued to be above 30%. The peak number of job turnover was among March 2004 graduates, at 36.6%. Since then the number has been declining, but persists in remaining at high levels, with 28.8% among March 2009 graduates (Graphic 44). This trend is also seen in high school graduates, with job turnover rates rising after the economic bubble burst. Among March 2000 graduates, the job turnover reached its peak at 50.3%. Since then the number has been declining, but still high, with 35.7% job turnover rate among March 2009 graduates (Graphic 45).

Graphic 44 Trend in Job Turnover Rates among New University Graduates by Length of Employment



(Note) 1 Number of people who found employment from each education level, presumed to be new graduates, are calculated from the certificate of graduation and the birth date on the New Insurance Qualifying Personnel subscription notification for employment insurance as a new graduate submitted by the office to Hello Work (Japanese government's Employment Service Center), then the job turnover rate/number of people who quit are calculated from the date the job ended.
 2 Due to rounding of numbers, the turnover rate for 3 years may not correspond to the total turnover rate of 1, 2, and 3 years together.
 Source) Developed by MLIT from: data from MHLW

Graphic 45 Trend in Job Turnover Rates among New High School Graduates by Length of Employment

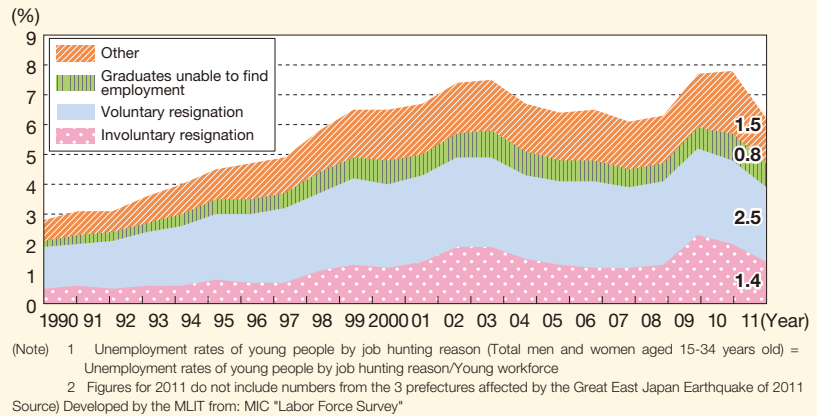


(Note) 1 Number of people who found employment from each education level, presumed to be new graduates, are calculated from the certificate of graduation and the birth date on the New Insurance Qualifying Personnel subscription notification for employment insurance as a new graduate submitted by the office to Hello Work (Japanese government's Employment Service Center), then the job turnover rate/number of people who quit are calculated from the date the job ended.
 2 Due to rounding of numbers, the turnover rate for 3 years may not correspond to the total turnover rate of 1, 2, and 3 years together.
 Source) Developed by MLIT from: data from MHLW

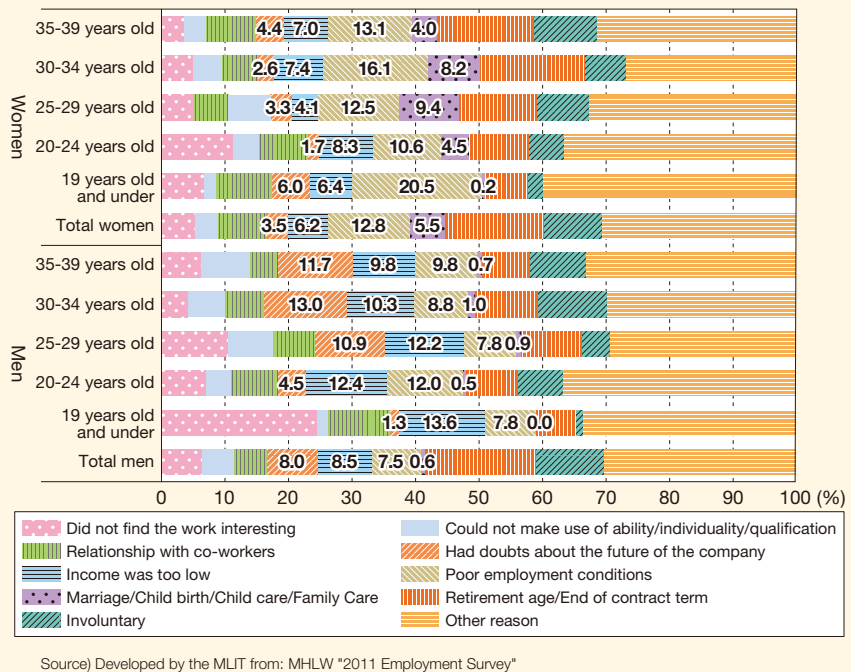
When looking at the breakdown of unemployment rates for young people (people 15-34 years old), the majority—over 40% of the total in 2011—cite the reason for being unemployed and/or job hunting as voluntary resignation from their previous job (Graphic 46). In addition, when people who changed jobs are asked, “why did you quit your previous job?” the majority of women in their 10’s-30’s answer that it was due to poor employment conditions, marriage, or child birth. The majority of men in their 10’s-30’s answer that it was due to having doubts about the future of the company, or dissatisfaction with current working conditions and/or income (Graphic 47). The context for this trend of young people quitting their job after a short term of employment is thought to be due to the difficulty in the overall employment situation. This causes many young people to take a job after graduation that they may not necessarily like, just to get some kind of employment, which seems to result in a large number of such young people quitting their jobs in the future. In fact, there seems to be a direct correlation showing that, the lower the number of jobs available at time of graduation, the higher the job turnover rates tend to be among the graduates of that year.

Despite the large number of people who quit their jobs to look for better work environments, there is no guarantee that changing jobs will lead to better pay or better employment status. The difference in income for people who switch jobs show that for age groups 25-34 year olds and 35-44 year olds, the percentage of people whose income actually increased from their previous job is in the higher 20 percentile to upper 30 percentile (Graphic 48).

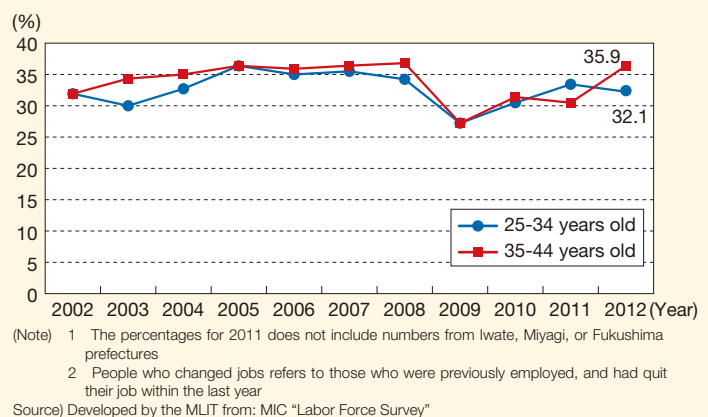
Graphic 46 Trend in Voluntary Resignation of Young People by Reason for Job Hunting



Graphic 47 Reason for Quitting Previous Job

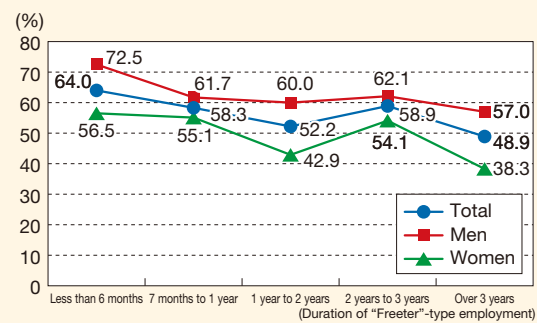


Graphic 48 Percentage of People Whose Income Increased after Job Change



In regards to changes in employment statuses, of those who went from a “Freeter” job to a permanent/regular position, 70% of men and 60% of women were able to switch to a permanent employee job if the duration of the Freeter job was less than six months. However, if the duration of working a Freeter job was over three years, only 60% of men and 40% of women were then able to find a position as a permanent employee. It seems that the longer a person works a Freeter job, the more difficult it becomes to find a job as a permanent employee (Graphic 49).

Graphic 49 Job Changing from Freeter to Permanent Employee



(Note) Based on a survey done in 2011 among men and women in their 20's.
 (Source) Developed by MLIT from: The Japan Institute for Labour Policy and Training (JILPT) "Development in Employment Activities and Awareness of Young People in Japan's Major Cities" (3rd Survey of Young People's Work Style)

(Decline in Income Levels)

As Japan's economic climate and the employment environment of young people change, there have been changes to the income levels of young people as well. This shift in income level affects the consumer behavior of young people, and can be said to be at the root of the changes in the day-to-day life of young people.

① Changes in Annual Income

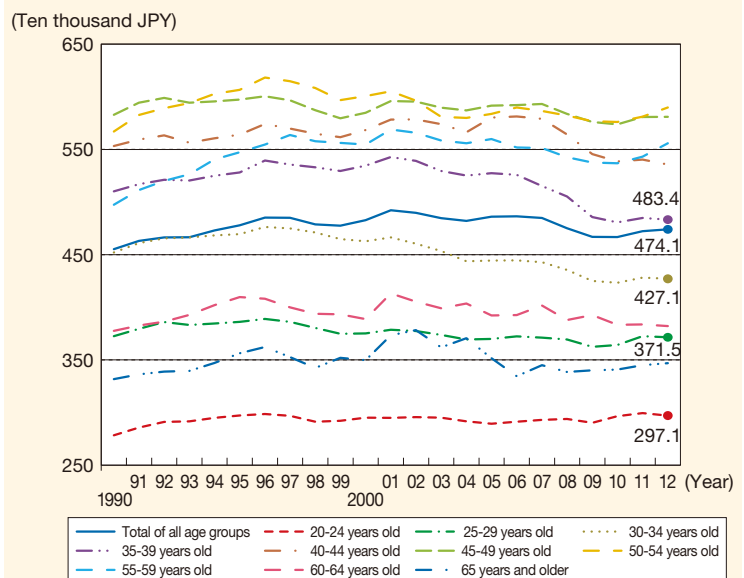
Looking at the annual income levels by age groups, the annual income levels of people in their 20's and 30's are consistently lower than the other age groups. Since the latter half of the 1990's up to the present, there has been a decline in the annual income levels among all age groups, but the decline in the income levels of the 30-34 years old and 35-39 years old age groups is especially noticeable (Graphic 50).

② Changes in Wage Growth Rate

When comparing wage growth rates by generation, the real wage growth of the older generations rise as they get older, with a relatively significant increase, showing a steep upward rise on the graph. On the other hand, for the younger generations the wage growth as they get older is comparatively lower, showing a low rise on the graph (Graphic 51).

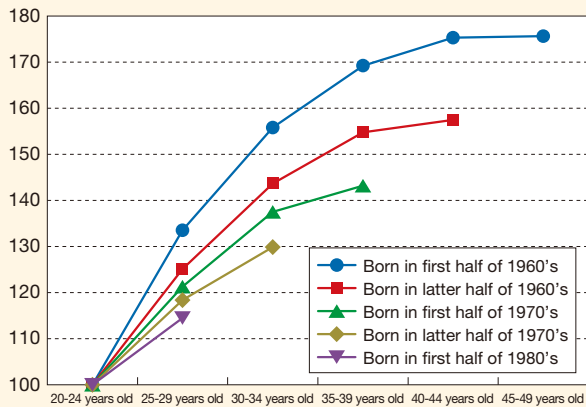
This shrinkage in the wage growth rate that should correspond to the younger people getting older may be explained by the rise in the percentage of people with non-regular employment positions among the younger generation. When the wage growth of regular and non-regular employees are compared, it is evident that for non-regular employees, along with overall lower wage levels, there is no set wage growth corresponding to becoming older, as there would be for regular employees. This can be attributed to the fact that without an organization such as a union, non-regular employees have very little wage bargaining power. The structure for developing advanced skills and abilities is also very poor for non-regular workers. These reasons make it difficult for non-regular employees to get a wage increase (Graphic 52).

Graphic 50 Trend in Annual Income Levels of General Workers by Age Group (Real)



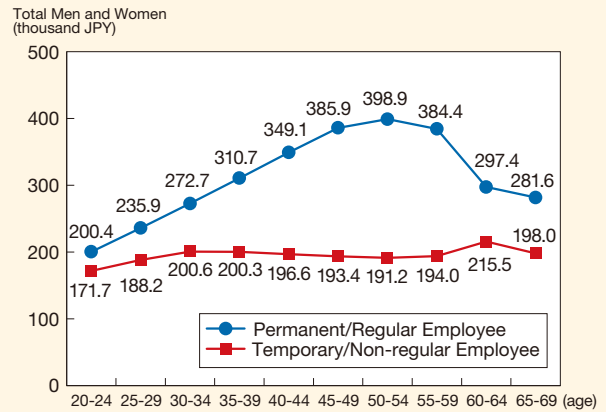
(Note) 1 Calculation: [Annual Income=regular monthly cash earning x 12 + special cash earnings]. Regular monthly cash earnings refer to cash earnings (Scheduled cash earnings and overtime payments). Does not include special earnings) predetermined by employment contract's payment terms and/or calculation method. Special cash earnings refer to previous year's amount.
 2 Survey results from companies with over 10 employees.
 3 Real annual income calculated using consumer price index (2010 Standard; All items, less imputed rent).
 (Source) Developed by the MLIT from: MHLW "Basic Survey on Wage Structure"; MIC "Consumer Price Index"

Graphic 51 Trend in Real Wage Growth by Generation (Real Earnings at age 20-24 years old=100)



(Note) 1 Wages by age groups from years 1981, 1986, 1991, 1996, 2001, 2006, and 2011 used, then calculated the rate of earnings growth from when each group was young.
 2 Set real earnings level at age 20-24 years old (Base year) as 100 for each group according to when they were born, then graphed the movement in real earnings amount compared to base year for every 5 years.
 3 Real earnings were calculated by using the consumer price index (2010 Standard; All items, less imputed rent).
 Source) Developed by the MLIT from: MHLW "Basic Survey on Wage Structure"; MIC "Consumer Price Index"

Graphic 52 Employment Type / Wage Amount by Age Group

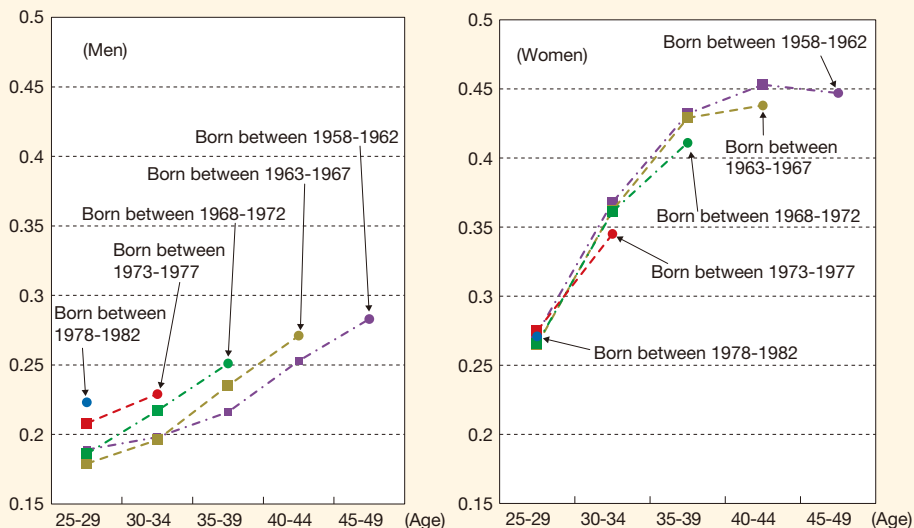


Source) Developed by MLIT from: MHLW "2012 Basic Survey on Wage Structure"

③ Trends in Income Disparity

With an increasing number of non-regular employees and decreasing income levels, there is a growing disparity of income levels between the generations. When looking at the trend in the Gini coefficient for annual income of employees by generation, though for women there is no significant change, for men, the younger the generation, the higher the Gini coefficient at each age point, showing that the disparity in income level is growing (Graphic 53).

Graphic 53 Trend in Gini Coefficient by Generation (Men and Women graphed separately)



(Note) 1 Estimate of total people employed include executives.
 2 Since the groups separated by annual income will differ depending on when the survey was done, a linear complementary method was used for the annual income groups in 2007 (15 separate groups) to make uniform and do a time series comparison.
 3 For the Gini coefficient, the median value of the annual income groups was used, and any value above JPY 15 million was put with average of JPY 20 million.
 4 The • indicates the end point, and marks when each age attained by cohort group in 2007.
 Source) Developed by the MLIT from: MHLW "2011 Analysis of Labour Economy"

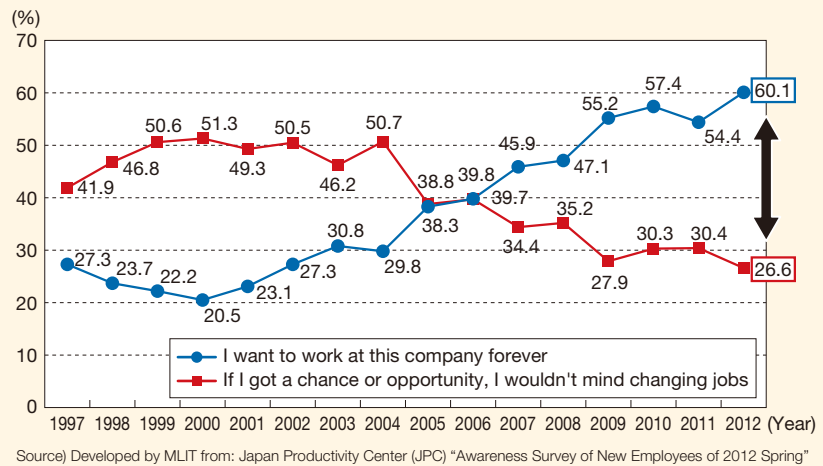
(2) Changes in Awareness Regarding Work

How has the awareness of young people regarding work changed in the difficult employment situation? When newly employed people were asked their opinion on changing jobs, the percentage of people who answered, “I want to work at this company forever” was higher than the percentage of people who answered, “If I got a chance or opportunity, I wouldn’t mind changing jobs,” and there seems to be a growing trend in recent years of people who would answer with the former opinion (Graphic 54).

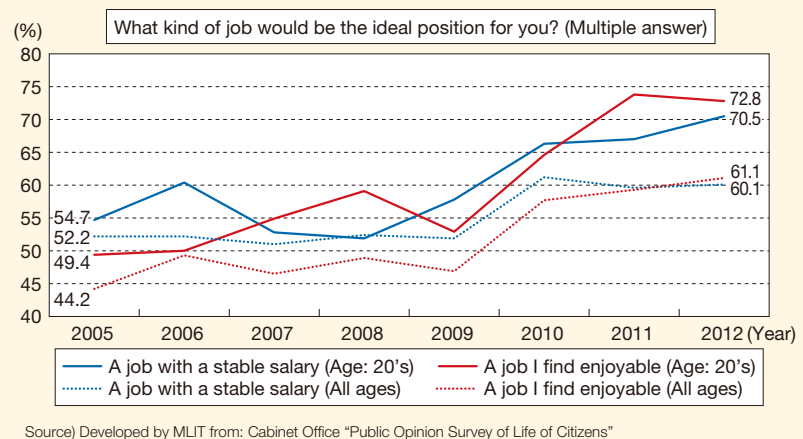
Furthermore, when asked what makes an ideal job position, the percentage of people who chose the answer, “A job with a stable salary” was growing higher among the younger generation compared to the overall population. The percentage of young people who chose the answer, “A job I find enjoyable” is also growing. It seems that while desiring a job with a stable income, young people are also looking for jobs that are “enjoyable,” and do not want to settle for just any job, but one that complement their values (Graphic 55).

In addition, new employees who were asked whether or not they would like to work abroad, the percentage of people who answered, “I do not want to work abroad” went from 29.2% in 2001 to 49% in 2010, showing a steady increase. The percentage of people who also answered, “I would work in any country/region” has also grown, and peaked in the last 10 years. Considering the fact that the percentage of people who take the middle road and answer, “Depending on the country/region, I would want to work abroad” is decreasing, it seems the people who do not want to go abroad and people who do is increasingly divided. This indicates that young people have clear opinions regarding what they value, and that they desire to act according to such values (Graphic 56).

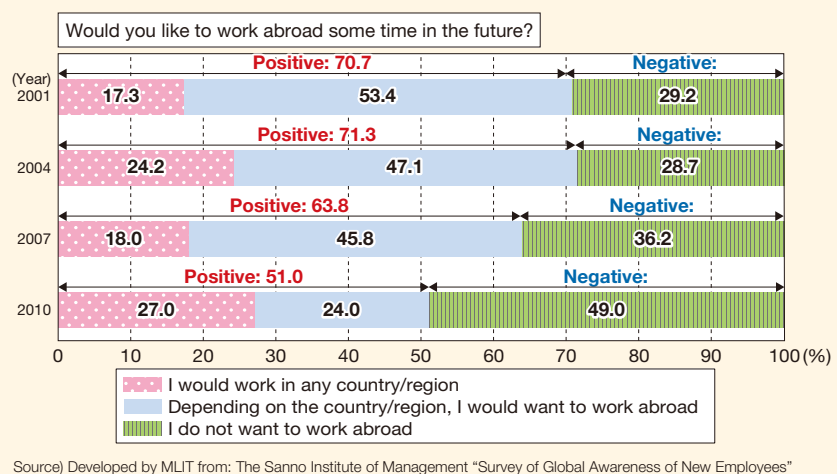
Graphic 54 Attitude Regarding Changing Jobs



Graphic 55 Ideal Job



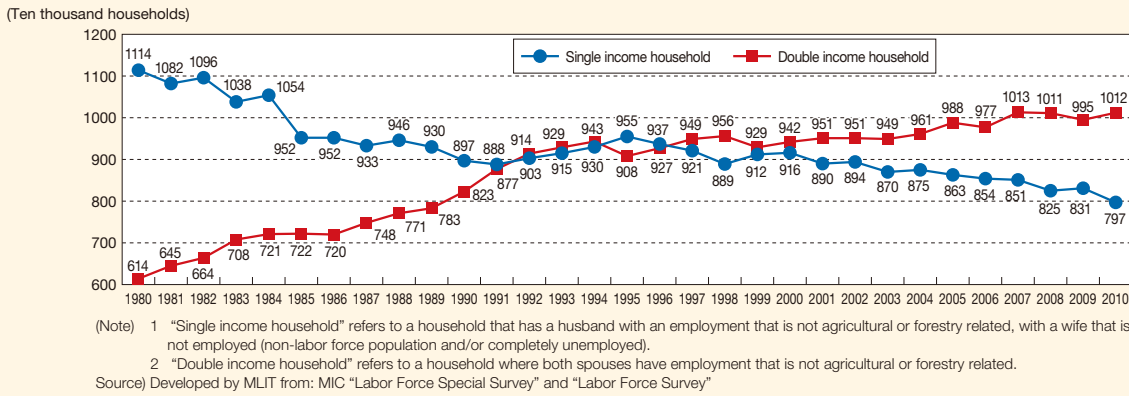
Graphic 56 New Employees' Preference for Working Abroad



(3) Changes in Work Environment for Women (Development of the Social Advancement of Women)

About 30 years ago, in 1980, in Japan the norm was to have a single income household where only the husband worked. Since then, the number of double income households has continually increased, until by 1997 the numbers of double income households exceeded the number of single income households. The number of double income households is continuing to increase and the difference in the numbers is expanding (Graphic 57).

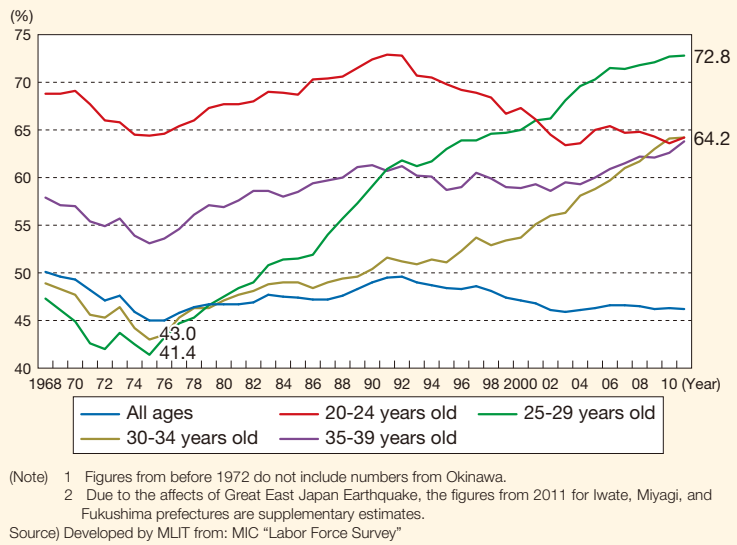
Graphic 57 Trend in Double Income / Single Income Households

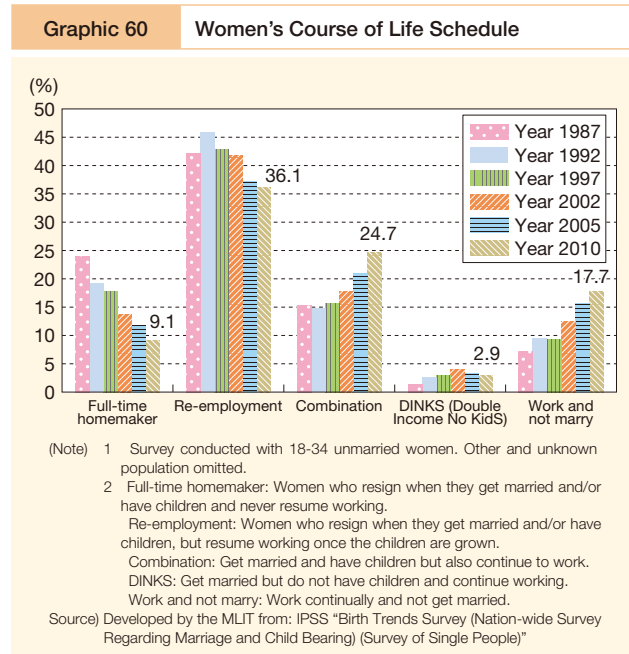
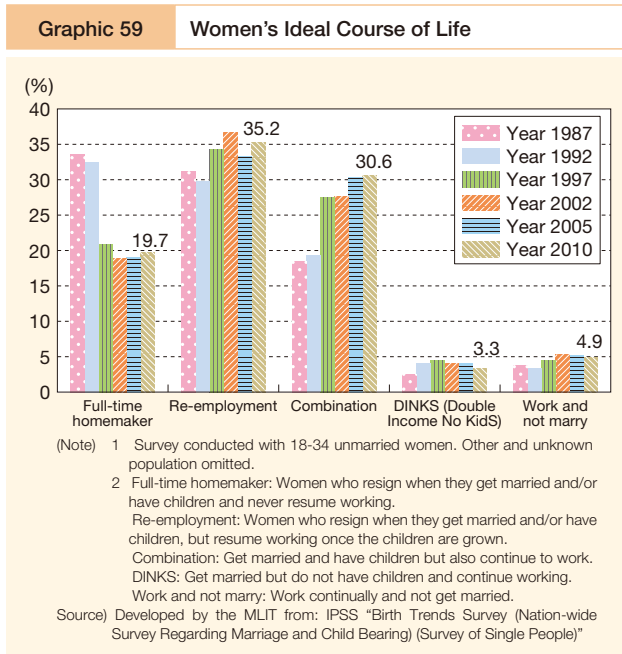


When analysing the employment rate of women by age groups, the rise in the number of women working is especially noticeable in late 20's to early 30's age group. In 1975 the percentage of women between the ages of 25-29 years old who were working was 41.4%, and the percentage for women between the ages of 30-34 years old was 43.0%. By 2011, the percentages were 72.8% and 64.2% respectively; a significant increase (Graphic 58).

One of the reasons for this rise in the number of employed women may be attributed to the heightening of women's motivation to work. A survey of women in 2010 asked women what would be their ideal course of life. The percentage of women who choose either the "Combination Course," (where she would get married and have children and continue to work) or the "Return to Work Course" (resign from work to get married and/or have children, then re-enter the work force once the children are grown) were both over 30%. In particular, the percentage of women who choose the Combination Course has been steadily growing since the survey taken in 1992. This implies that desire to have both a career and a family among women is heightening (Graphic 59, 60).

Graphic 58 Trend in Employment Rate of Women by Age Group



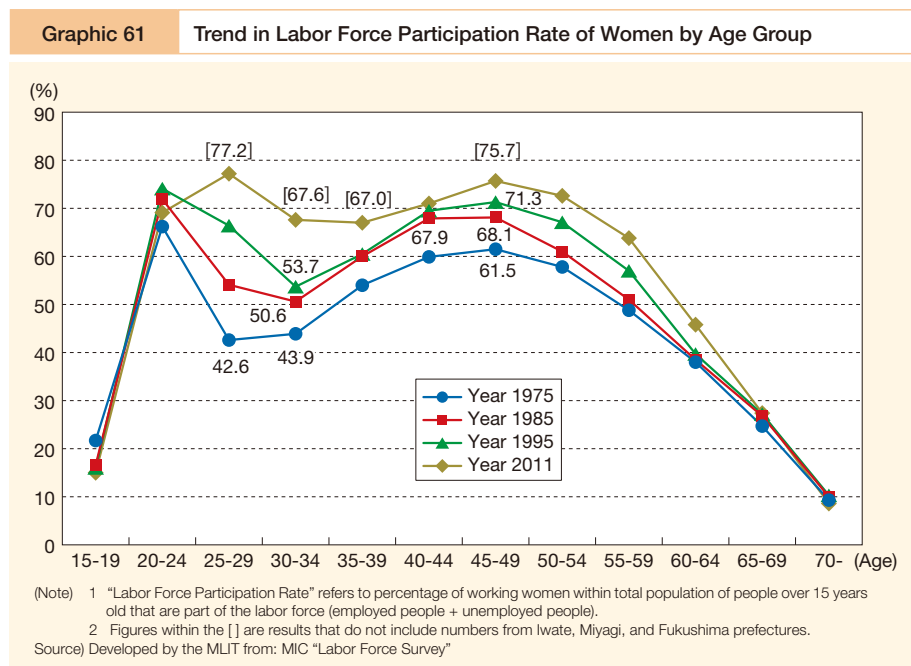


(Percentage of Women Working after Getting Married is Rising, Percentage of Women Working after Having a Child Remains Level)

Until recently, many women who worked usually resigned to get married/have child(ren)/raise child(ren). Even if women decided to work while raising a family, usually they would find a part-time job that fits around the family schedule. Lately though, as the employment rate of women continues to rise, how has women's employment situation changed if analyzed by life stage?

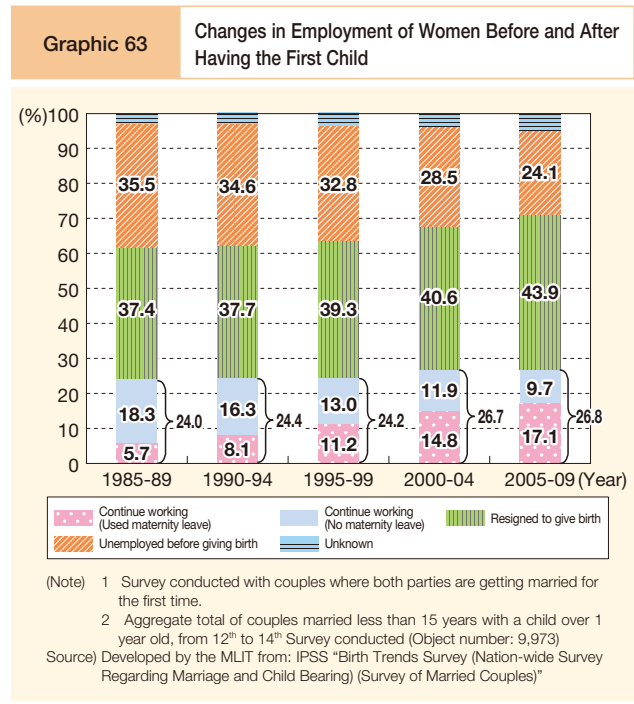
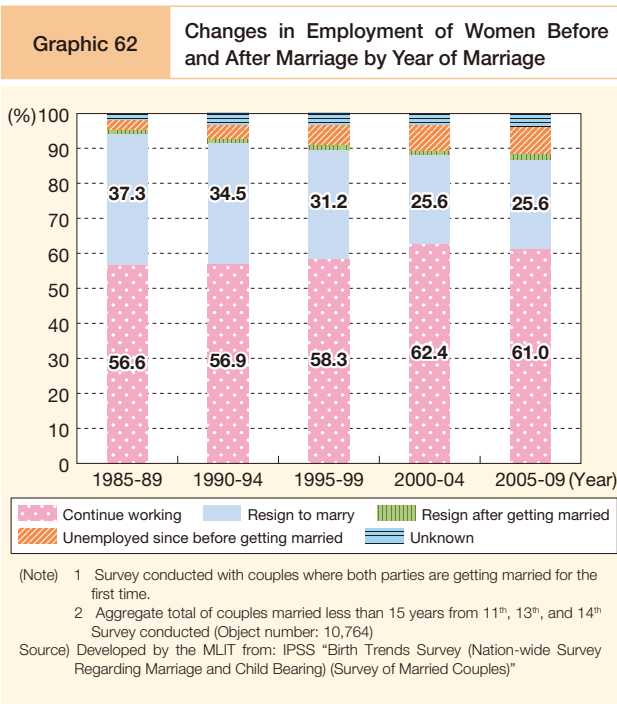
When looking at the labor force participation rate of women in Japan by age group, there is a significant dip in labor force participation rates of women in their late 20's to 30's—right around the time many women get married and/or have children—creating an M-curve on the graph. Though this M-curve dip is still observable in recent graphs, it has started rising over the years. This is thought to be due to rising numbers of women that are unmarried or marry later in life, age at which women marry or have children, and changes in the trend of women resigning to get married and/or have children.

Within the M-curve, as the number of women who choose to pursue higher education rises, the rate of labor force participation is dropping for women in the 15-19 years old age group. The values of the M-curve dip are as follows for women aged 25-29 years old: 42.6% in 1975, 50.6% in 1985. The dip value was 53.7% in 1995, but occurred in the age group of 30-34 years old, and in 2011 the dip moved to the 35-39 years old age group, with 67%. This points to the affect of the recent trend in women getting married and having children later on in their life. The reasons for the labor force participation rate for women aged 25-29 years old, and aged 30-34 years old rising may be attributed to the increasing numbers of women who graduate university and find employment, unmarried women who continue to work long-term in



their careers, and those who continue to work even after they get married and/or have children (Graphic 61).

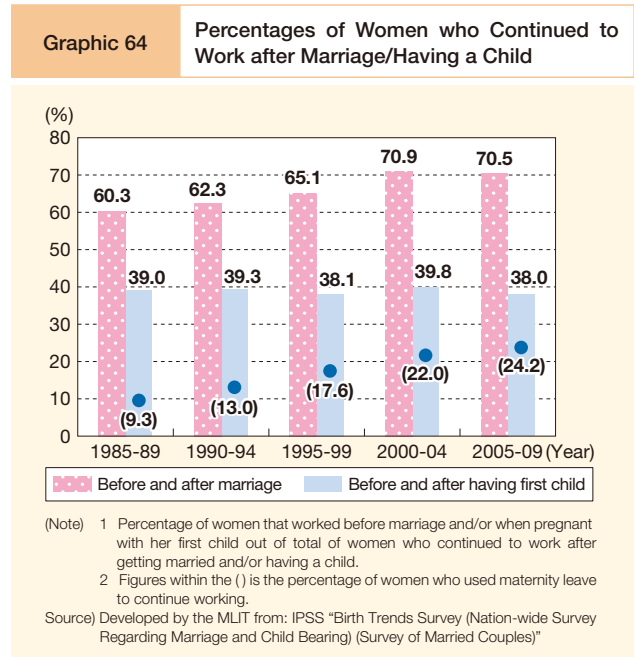
In particular, looking at the relationship between the women who get married/have children and women who continue to work, we can see that there is a different trend between women who resign to marry and women who resign to have a child. If we look at the employment situation of a married woman before and after her marriage, the percentage of women who continue to work even after getting married is around 60%, while the percentage of women who resign to marry has been dropping, from 37.3% during 1985-1989 to 25.6% during 2005-2009 (Graphic 62). On the other hand, if we look at the employment situation of a married woman before and after having a child, because the percentage of women who work before getting pregnant has increased, the percentage of women who resign to have a child has grown from 37.4% between 1985-1989 to 43.9% between 2005-2009, but the percentage of women who continue to work after having a child has also increased from 24.0% to 26.8%, respectively (Graphic 63).



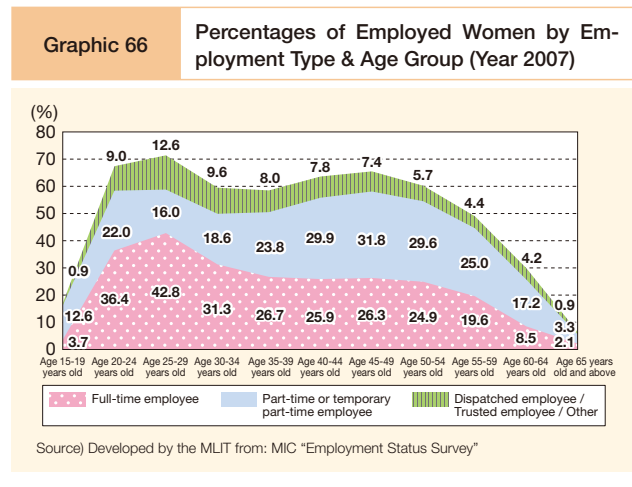
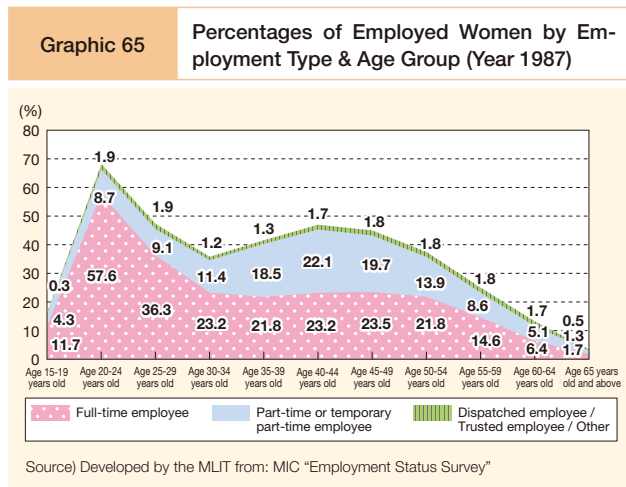
Furthermore, to analyse more closely, we will narrow down the demographic to women who were already working before marriage or having a child to find the percentage of women who continued to work after marriage and/or children. Though the percentage of women who continued to work after getting married has risen from 60.3% between 1985-1989 to 70.5% between 2005-2009, the percentage of women who were working before getting pregnant and who continued to work after giving birth has stayed at 38-39%, without much variance over the last 30 years (However, the percentage of women who continued to work after having a child by using maternity leave is rising). This shows that it is still difficult for women to combine a career and raising children (Graphic 64).

(Increase in Non-regular Employment)

Next, we will look at the changes in the type of employment for women in age groups where the labor participation rate is rising on the M-curve; the 25-29 years old and 30-34 years old groups. If we compare the years 1987 and 2007, the employment rate is rising for both 25-29 years old and 30-34 years old age groups. However, if we divide the employment by type—"Permanent employee", "Part-time or

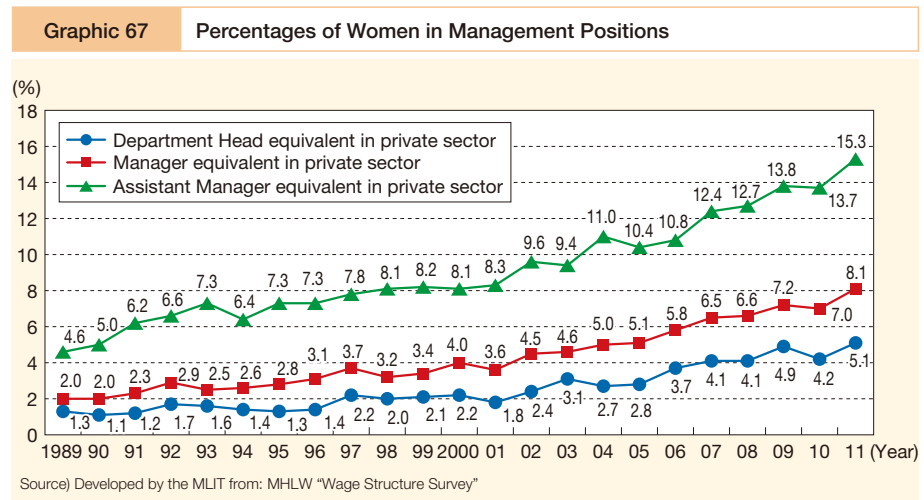


temporary part-time employee”, “Dispatched employee/Trusted employee/Other”—the rise in employment rate is more due to increase in the number of women working a “Part-time or temporary part-time” or “Dispatched/Trusted/Other” type of employment, more than the increase in “Permanent” employment (Graphic 65, 66).



(Percentage of Women in Management Positions at Low Levels)

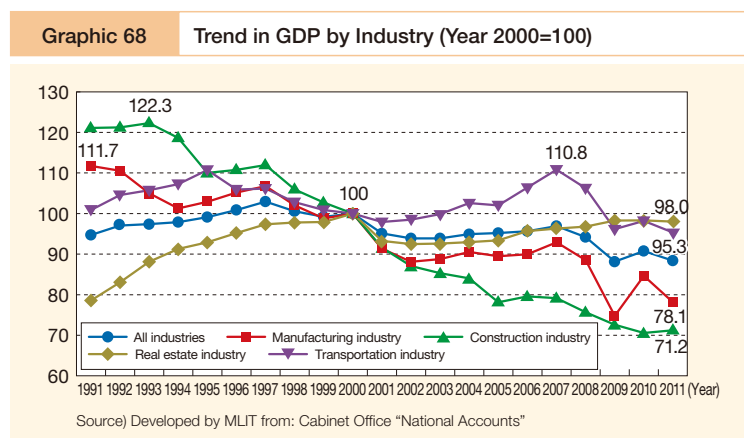
The percentage of women in management positions has yet to reach sufficient levels. Looking at the percentages by Assistant Manager, Manager, and Department Head, the percentage of women promoted to each of these positions are seeing yearly growth. Still, the higher the position level, the lower the percentage of women in these positions (Graphic 67).



(4) Changes in the Employment Situation of Young People in Industries Related to Land, Infrastructure, and Transport

(Gross Domestic Product (GDP) by Industry Indicates Decline in Construction Sector)

Industries related to land, infrastructure, and transport—such as construction, real estate, and transport industries—are industries that have an important role in ensuring the safety and security of daily life and creating diverse communities to support the development of Japan’s economy, and to enrich the day-to-day life of the populace. If we look at the position of industries related to land, infrastructure, and transport within the Japanese economy—setting the level at 100 for year 2000 for GDP by industry—while all industries show gradual decline, transport industries and real estate industries have remained level. The GDP of the construction industry however, is in decline, having dropped to 71.2 in 2011; indicating the shrinking of the construction industry in Japan (Graphic 68).



(Decline in Number of Employed Young People)

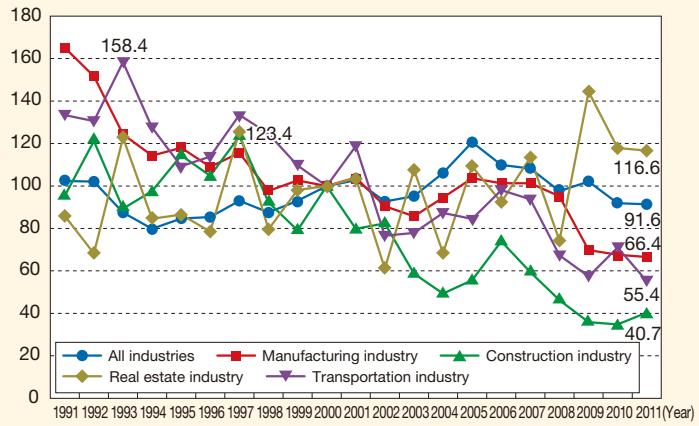
Furthermore, looking at the industries' conditions from the perspective of the number of young people employed, the fact that the number of young people employed in all sectors are in decline—including a decline in new hires of young people in industries related to land, infrastructure, and transport—also points to the shrinking of all these industries. If we sent the level at 100 for year 2000 to analyse the number of new hires of young people (under 35 years old) by industry, the real estate industry repeats an up and down movement, while the construction and transport industries both show a consistent decline. The construction industry in particular has seen a big drop in the last 10 years (Graphic 69).

If we look at the balance between the number of new hires and number of people who resign by industry, the number of new hires left after subtracting the people who resign has remained fairly level for the real estate industry, but for construction and transport industries the numbers have been in long-term decline. Even by checking on the internet, we can see that the number of young people entering these industries is decreasing (Graphic 70).

These results also show the changes evident in the demographic composition of people employed by industry. If we look at the percentage of employed people under 40 years old by industry, the percentage is in decline in all industries, decreasing from 42.4% in 2000 to 38.5% in 2012. In the construction and transport industries, the percentage of employees under 40 years old is in decline at lower levels compared to other sectors, and the magnitude of diminution is growing. For the real estate industry, in comparison with other industries, the percentage of employees under 40 years old has been at low levels, and has dropped even further (Graphic 71).

Graphic 69

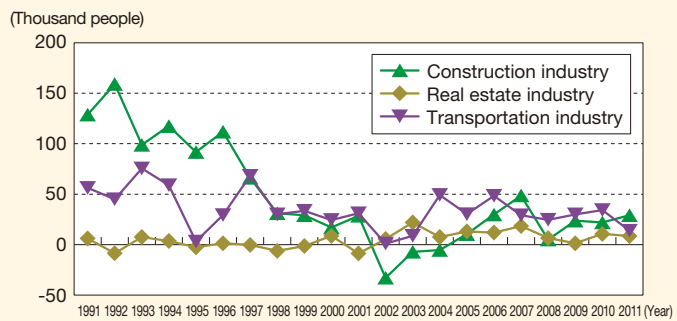
Trend in New Hires of People Under 35 Years Old by Industry (Year 2000=100)



(Note) 1 The industry classification for "Transportation industry" (from 1991 to 2008) has been revised to include "Postal industry" from 2009.
 2 From 2009 the industry classification for "Real estate industry" has been revised to include goods leasing industry with real estate.
 Source) Developed by the MLIT from: MHLW "Employment Survey"

Graphic 70

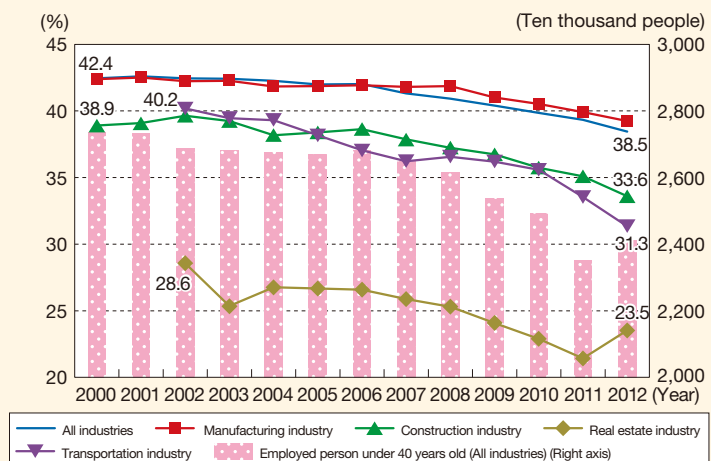
Trend in Number of Under 35 Years Old New Hires that Remain by Industry



(Note) 1 The industry classification for "Transportation industry" (from 1991 to 2008) has been revised to include "Postal industry" from 2009.
 2 From 2009 the industry classification for "Real estate industry" has been revised to include goods leasing industry with real estate.
 Source) Developed by the MLIT from: MHLW "Employment Survey"

Graphic 71

Percentages of Employees Under 40 Years Old by Industry



(Note) Figures for 2011 do not include Iwate, Miyagi, and Fukushima prefectures.
 Source) Developed by the MLIT from: MIC "Labor Force Survey"

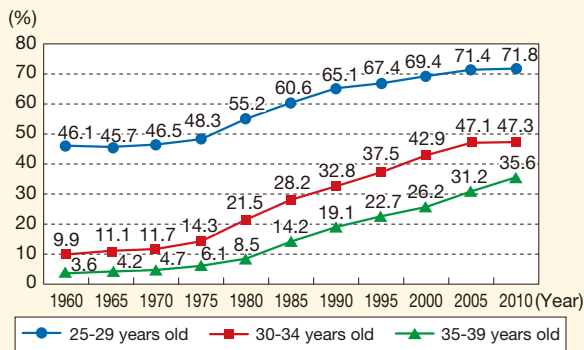
Section 2 Changes in the Way of Living

(1) Trend in Marriage / Raising Children

(Development of People Remaining Unmarried or Marrying Later in Life)

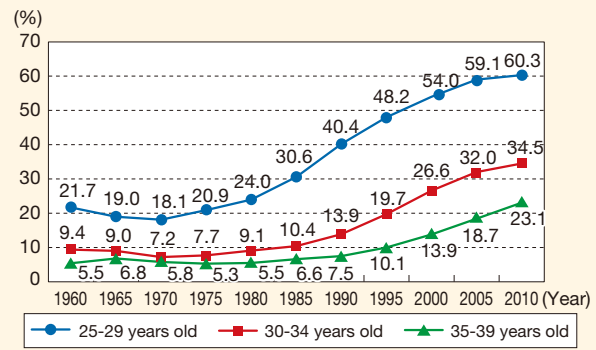
The percentage of people who remain unmarried has been rising since the latter half of the 1970's. In 2010, in the age group of men between 25-29 years old the percentage was at 71.8%, for men 30-34 years old at 47.3%, and men 35-39 years old at 35.6%. For women in the age group 25-29 years old the percentage was at 60.3%, women 30-34 years old at 34.5%, and women 35-39 years old at 23.1% (Graphic 72, 73). There is also a rising percentage of people aged 50 years old who have never married, which is indicative of the percentage of people who never marry. This percentage has seen a great leap since 1990, and by 2010, the percentage of people who never married was at 20.1% for men, and at 10.6% for women. We believe these percentages will continue to rise, and have estimated that by year 2030, the number of people who never marry will be approximately 27.6% (1 in 3.6 people) for men, and around 18.8% (1 in 5.3 people) for women (Graphic 74).

Graphic 72 Trend in Percentage of Unmarried People by Age Group (Men)



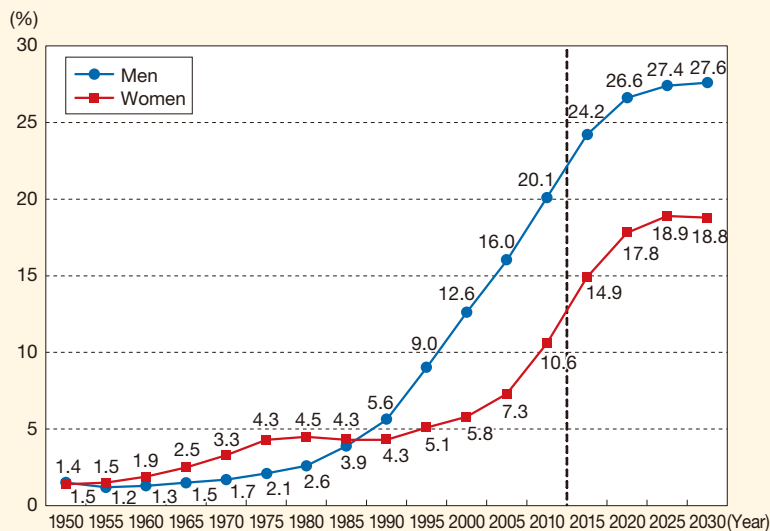
(Note) Figures for years 1960-1970 do not include numbers from Okinawa prefecture. Source) Developed by the MLIT from: MIC "Census"

Graphic 73 Trend in Percentage of Unmarried People by Age Group (Women)



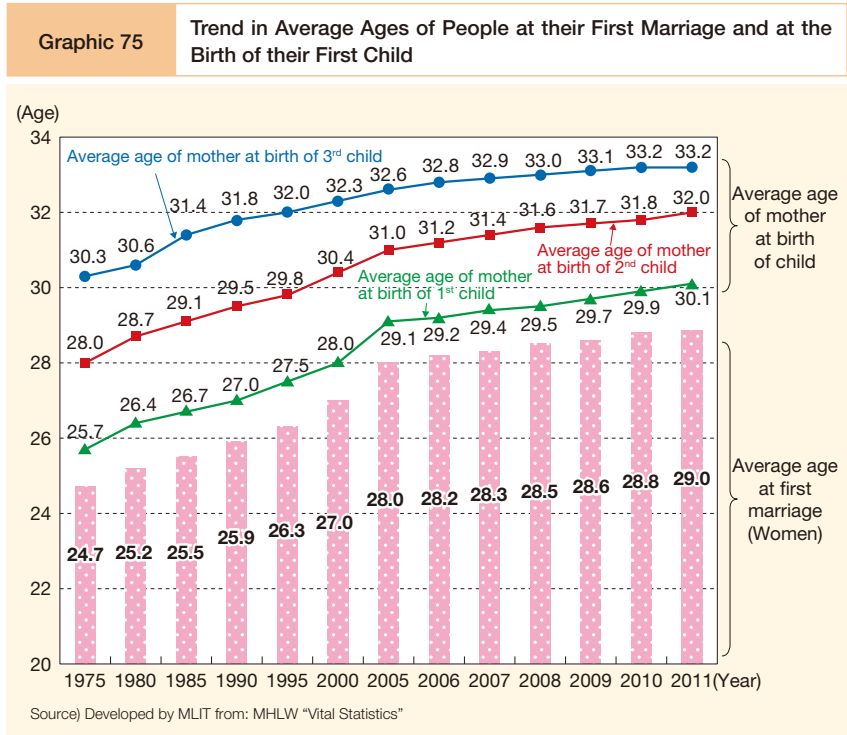
(Note) Figures for years 1960-1970 do not include numbers from Okinawa prefecture. Source) Developed by MLIT from: MIC "Census"

Graphic 74 Trend in Percentage of People Who Never Marry



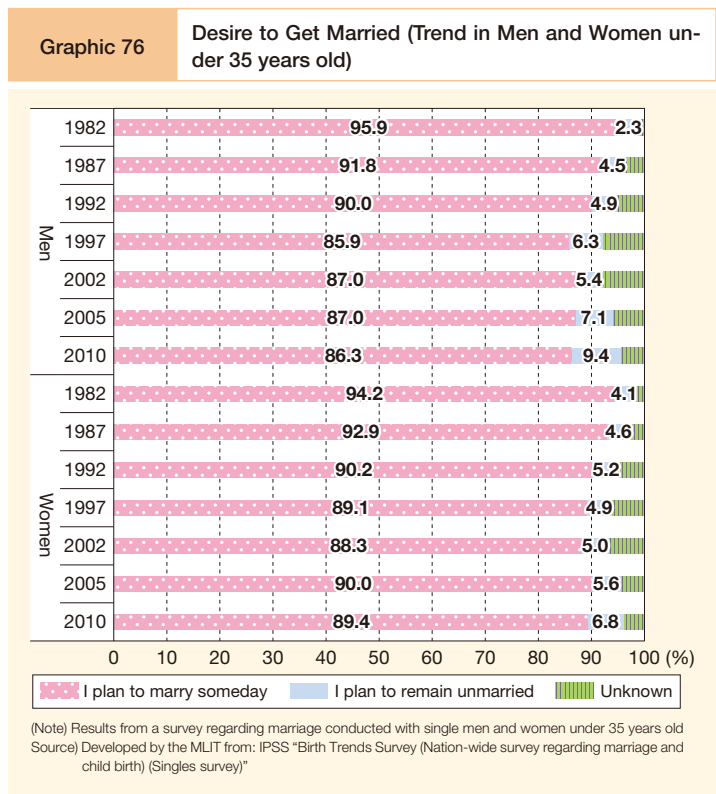
(Note) "Percentage of People Who Never Marry" refers to the percentage of those who have never married by the time they are aged 50 years old. Averages for unmarried people 45-49 years old and 50-54 years old were used from the "Population Statistics (2012 version)" up to 2010, and for 2015 and beyond, calculated from "Projections for Japanese Households." Source) Developed by MLIT from: IPSS "Population Statistics (2012 version)", "Household Projections for Japan (Nation-wide estimate) (Estimate from March 2013)"

In addition to the rise in the number of unmarried people, there is also a growing number of people who become married later on in life. The average age of married women has been rising since the latter half of 1970's; from 24.7 years old in 1975 to 29.0 years old in 2011. Due to the rise in later marriages, the average age at which women have their first child is also getting older. In 1975 the average age of when a woman had her first child was 25.7 years old; in 2011 the average age had risen to 30.1 years old (Graphic 75).



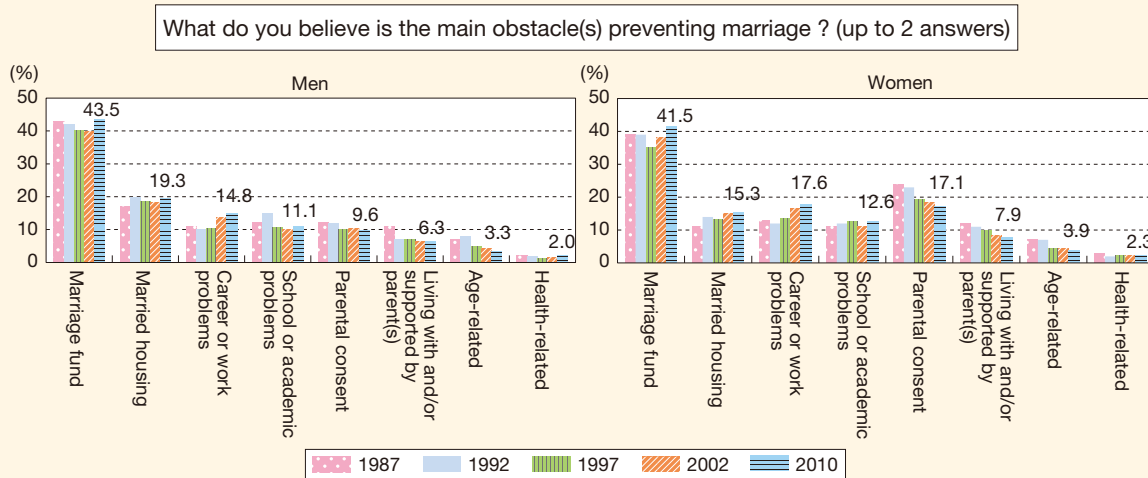
(Desire to Marry Still at High Levels)

Though the number of unmarried/married later people is growing, the ratio of those who desire marriage is remain high. The percentage of people under 35 years old and unmarried but want to get married at some point has been over 85% for men and around 90% for women since 1982, and maintains similar levels. Even in 2010, 86.3% of men and 89.4% of women answered, "I plan to marry someday" when asked, showing that the desire to get married has not necessarily decreased (Graphic 76).



The fact that there are growing numbers of unmarried/late married people, despite high levels of desire to get married, may be attributed to economic constraints. When unmarried people were asked what the obstacles were for getting married, over 40% of unmarried people listed the lack of a "marriage fund," and another 19% of men and over 15% of women listed the lack of a married housing (Graphic 77).

Graphic 77 Obstacles preventing marriage



(Note) Survey conducted with single men and women under 35 years old who want to get married but answered that they have an obstacle(s) preventing marriage. Source) Developed by MLIT from: IPSS "Birth Trends Survey (Nation-wide survey regarding marriage and child birth) (Singles survey)"

All the listed obstacles existed in previous eras as well, but for the present young generation, it seems the economic constraints may be more difficult due to the growing uncertainty in employment possibilities and subsequent decrease in income. When the marital status of young people is analyzed by their employment type, in 2010, 27.2% of men with regular employment were married, while only 6.7% of men with non-regular employment were married; a difference of over 20 percentage points. For women, 28.2% with regular employment were married, while 25.8% with non-regular employment were married, which means the difference between the two percentages is not as significant as the men. From this, we can infer that for men in particular, the rise in the number non-regular employees is related to the growing number of people who are unmarried/married later in life (Graphic 78).

Graphic 78 Marital/Relationship Status by Employment Type (Age: 20's/30's)



(Note) 1 "Married" refers to people who have been married for 3 years or less. 2 "Married" people have been categorized by the type of employment they had before marriage. 3 "Regular employment" is a total of all who are "Employed (Permanent position)" and "Employed (Full-time employees such as civil servants, public corporation workers, etc.)"; "Non-regular employment" is a total of all who are "Non-regular employees such as part-time/temporary workers"; "Self-employed" is a total of all "Self-employed in Agricultural/Forestry/Fishery" and "Self-employed in Commerce/Service industry" and includes freelancers and people working in family businesses. 4 "Unemployed/Not working" is a total of all who are "Unemployed (on leave)" and "Not working" and "Not working" does not include people who are a "Home-maker", "Student", or "Unemployed (on leave)". Source) Developed by MLIT from: Cabinet Office "2010 Marriage/Family Composition Related Survey Report"

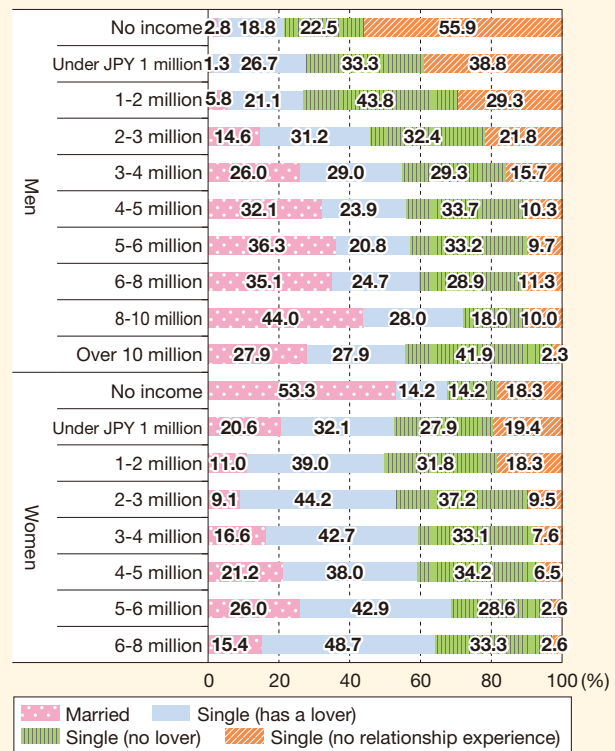
Likewise, annual income amounts also seem to affect marital status. Men in the annual income of JPY 6 million range tend to have a higher percentage of married men, and the higher the income level, the higher the percentage. However the percentage of men with an annual income level of over JPY 10 million who are married seems to be in decline, showing that after hitting a certain income level, the marriage rate drops (the same phenomenon can be seen in women with annual income levels over JPY 6-8 million). This is thought to be due to the fact that people with high income levels are already independent, and may not feel any need for additional economic benefits that can be gained from marriage (Graphic 79).

(Rising Percentage of Single-person Households and Unmarried Young People Living with Parents)

The increased numbers of people that are unmarried/married later is also reflected in household statistics. As analyzed in Chapter 1, due to the growing number of people who are unmarried/married later, the number of single-person households of young people has increased from 15.0% in 1985 of single-person households of people in their 30's, to 32.2% in 2010, and has continued to rise; current estimates show that by 2035 this percentage will rise to 35.3% (Graphic 12).

Furthermore, as the population that would have left home to get married in previous eras continue to live with their parents as they are unmarried/married later, the population that would have left home to pursue higher education or employment opportunities are also continuing to live with their parents, as more young people find it difficult to gain enough economic independence to leave home. An analysis of young people's marital status and the percentage of young people living with parents shows that the percentage of single people who live with their parents are rising in age groups of 20's, 30-34 years old, 35-39 years old. In 2010, 53.1% of people in their 20's (over half), 27.6% of people aged 30-34 years old (1 in 3.6 people), and 20.1% of people aged 35-39 years old (1 in 5 people) continued to live with their parents. In particular, the age group of 35-39 years old has seen a significant rise, from 10.9% (0.85 million people) in 1995 to 20.1% (1.93 million people) in 2010 (Graphic 80, 81, 82).

Graphic 79 Marital/Relationship Status by Annual Income (Age: 20's-30's)

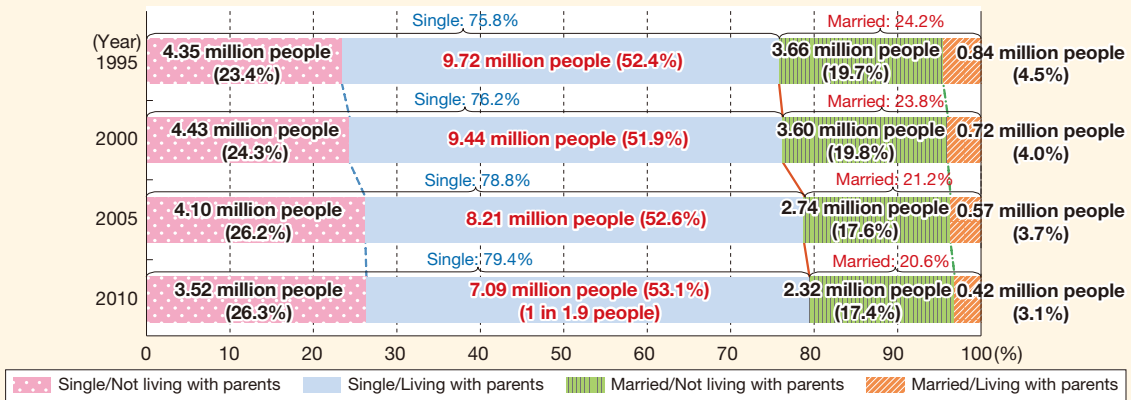


(Note) 1 "Married" refers to people married over 3 years.

2 For women, as only a few had such high income levels (only 11 women with JPY 8-10 million and 3 with over JPY 10 million), they have not been included in the graph.

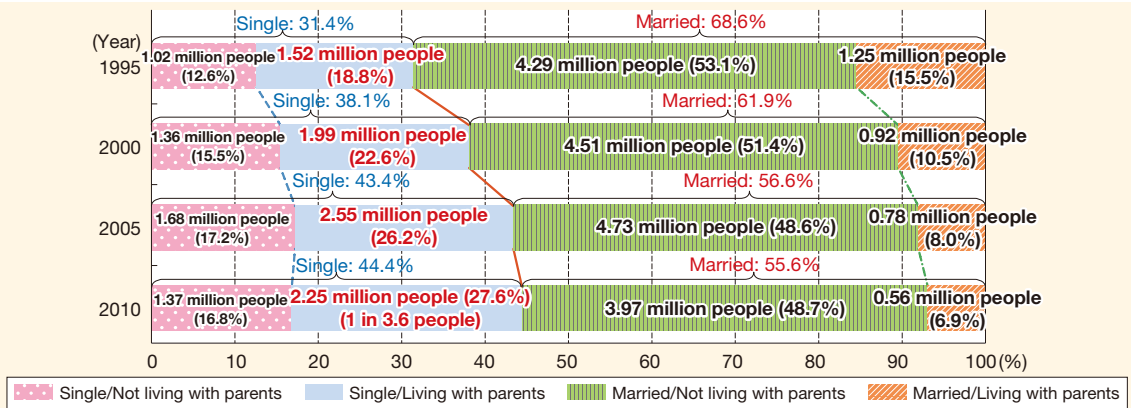
Source) Developed by MLIT from: Cabinet Office "2010 Marriage/Family Composition Related Survey Report"

Graphic 80 Marital Status / People Living with Parents in their 20's



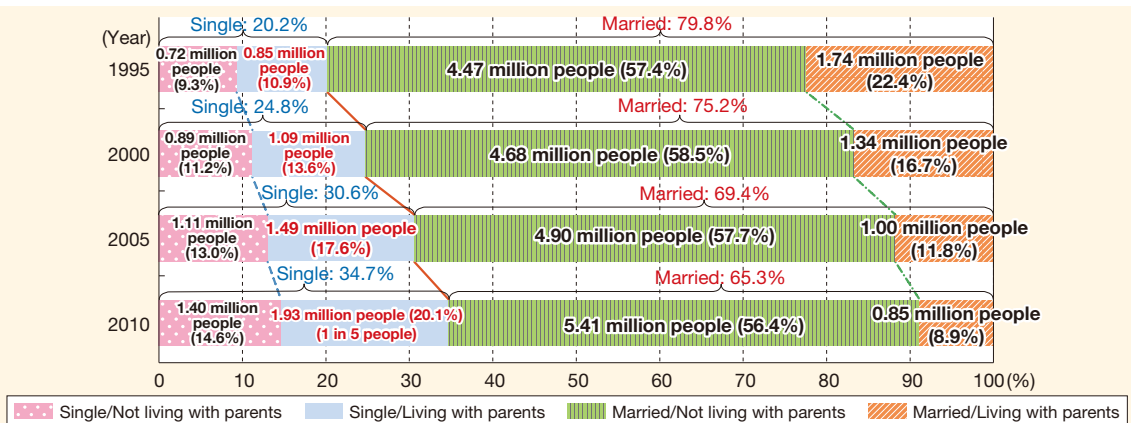
(Note) 1 "Single" refers to total of people who are "Not married", "Widowed", "Divorced".
 2 The percentages do not include people with unknown marital statuses and people that cannot determine whether they are living with parents or not.
 Source) Developed by the MLIT from: MIC "Census"

Graphic 81 Marital Status / People Living with Parents aged 30-34 years old



(Note) 1 "Single" refers to total of people who are "Not married", "Widowed", "Divorced".
 2 The percentages do not include people with unknown marital statuses and people that cannot determine whether they are living with parents or not.
 Source) Developed by the MLIT from: MIC "Census"

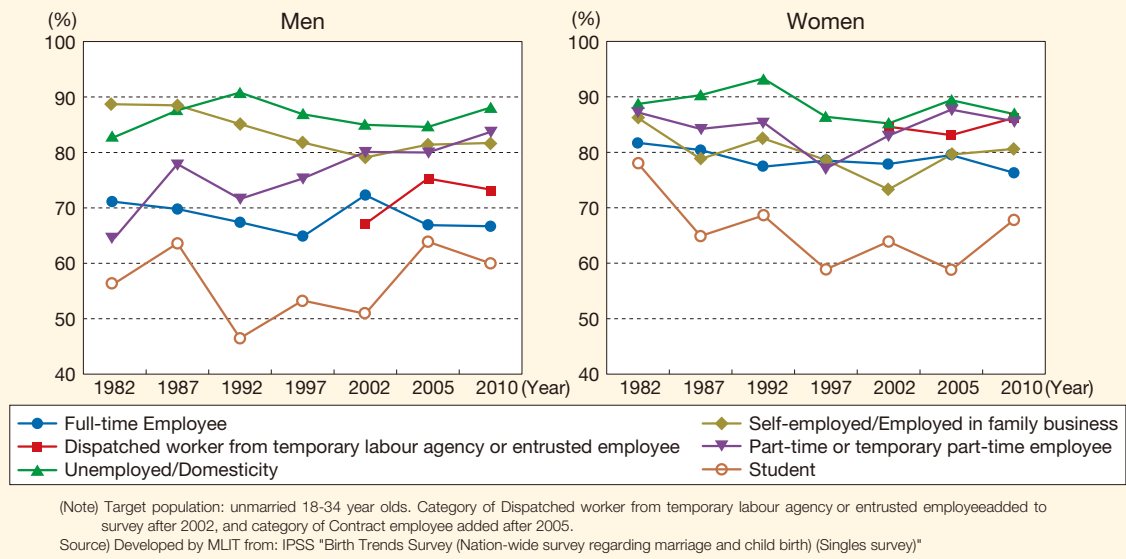
Graphic 82 Marital Status / People Living with Parents aged 35-39 years old



(Note) 1 "Single" refers to total of people who are "Not married", "Widowed", "Divorced".
 2 The percentages do not include people with unknown marital statuses and people that cannot determine whether they are living with parents or not.
 Source) Developed by the MLIT from: MIC "Census"

When the percentage of unmarried people who live with their parents is separated by employment status, for men, those who are regular employees that live with their parents are under 70%, while over 80% of those who work in part-time jobs live with their parents. The same trend can be seen with women as well, showing that the more unstable an individual's employment situation is, the more likely he or she is to live with parents (Graphic 83).

Graphic 83 Percentage of Unmarried People Living with Parents by Employment Status (Age: 18-34 years old)

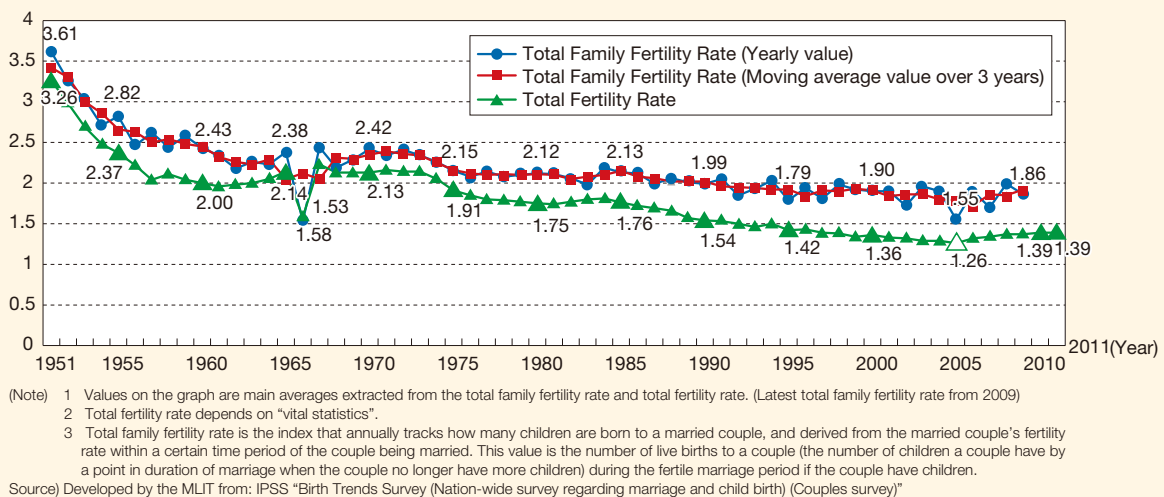


(Both Total Fertility Rate and Total Family Fertility Rate in Decline)

The total fertility rate significantly declined after WWII, since the 1950's to the 1960's, from 3.26 in 1951 to 2.00 in 1960. After 1975 the level dropped below 2.0, and reached an all time low of 1.26 in 2005. Recently the number seems to be recovering, with 1.39 in 2011.

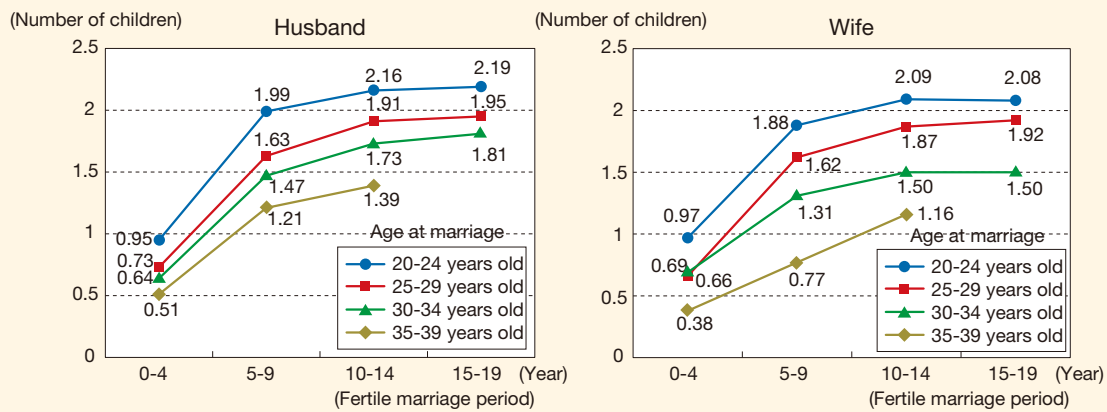
On the other hand, the total family fertility rate—which indicates the total number of children a married couple ends up having—has been in a long-term decline, from 3.61 in 1951 to 1.79 in 1995. Since then the number has been below 2.0, but compared to the decline in total fertility rate the decreasing margin is not as steep. Like the total fertility rate, the total family fertility rate has seen higher numbers in recent years, with 1.86 in 2009 (Graphic 84).

Graphic 84 Trend in Total Family Fertility Rate and Total Fertility Rate



Looking at the average number of children born by the parents' age groups, for women married around age 20-24 years old (15-19 years of fertile marriage years. Same below), the average number of children birthed is 2.08 children, while the average number of children for women married at 25-29 is 1.92 children; and 1.50 children for women married at 30-34 years old. This shows that the number of children birthed decreases with older age at time of marriage (Graphic 85).

Graphic 85 Average Number of Children Birthed by Couples' Age at Marriage and by Fertile Marriage Period



(Note) 1 Only includes couples in their first marriage (results with unknown number of children not included).
 2 Total number of couples surveyed (husband & wife): Age group 20-24 years old (1,505 & 922), 25-29 years old (2,687 & 2,533), 30-34 years old (842 & 1,289), 35-39 years old (178 & 420)
 Source) Developed by the MLIT from: IPSS "Birth Trends Survey (Nation-wide survey regarding marriage and child birth) (Couples survey)"

From such information, we can discern that there are several reasons for Japan's aging population and low child birth rates. In addition to the decreasing number of young people themselves—the young people being the ones who would be bearing and raising the next generation—due to the increase in people that are unmarried or marry later in life, the number of children couples have is also decreasing.

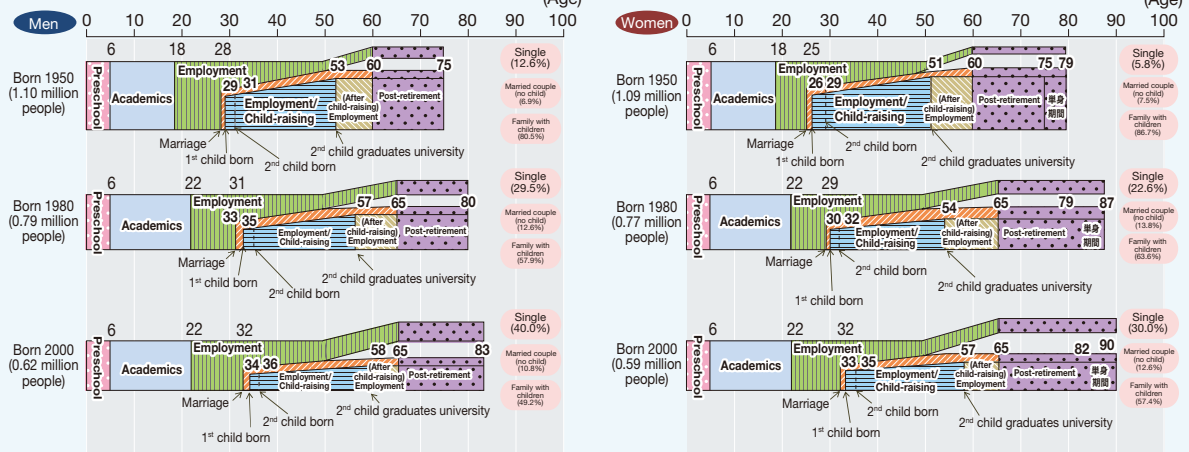
Column Future Prediction of Life Cycle

Rise in pursuit of higher education. Development of people who are unmarried/married later in life. Delayed retirement. Growing average expected life expectancy. These are all indicators of the changes occurring in Japan's society, but when we take a step back to look at each person's life cycle as they are shaped by these changes, how has the "typical" lifecycle been changing? In this column, we will analyze the changes in life cycle by taking a closer look at the generations born in 1950, 1980, and 2000.

For men born in 1950, the average life cycle could be described as follows: start working at age 18, marry at age 28, have his first child at age 29, retire at age 60, live out the rest of his life for 15 years until death at age 75. However, for those born in 1980 and 2000—indeed, the more recent the generation—the milestones of life are more likely to occur later and later in a person's lifespan, due to the rise in percentages of people pursuing higher education, older age of starting employment, marrying later in life, delay in retirement, and growth in average life expectancy. Furthermore, as more people explore alternative lifestyles as they debate whether or not to marry, whether or not to have children, etc., there is no longer a lifestyle followed by a large majority. Instead, there will be several concurrent lifestyles. First of all, the decision of whether or not to marry will be a major demarcation in lifestyle type. For men born in 1950, getting married was part of the average lifestyle, but for generations born in 1980 and 2000, there is a growing number of people who choose to never marry.

Next, among those who do marry, there will be another major lifestyle choice of whether or not to have children. For men born in 1950, having children as part of the average lifestyle, but for generations born in 1980 and 2000, there is a growing number of people who choose to never have children. These same trends are also seen among women.

Average Life Cycle by Generation and its Differentiation (Age)



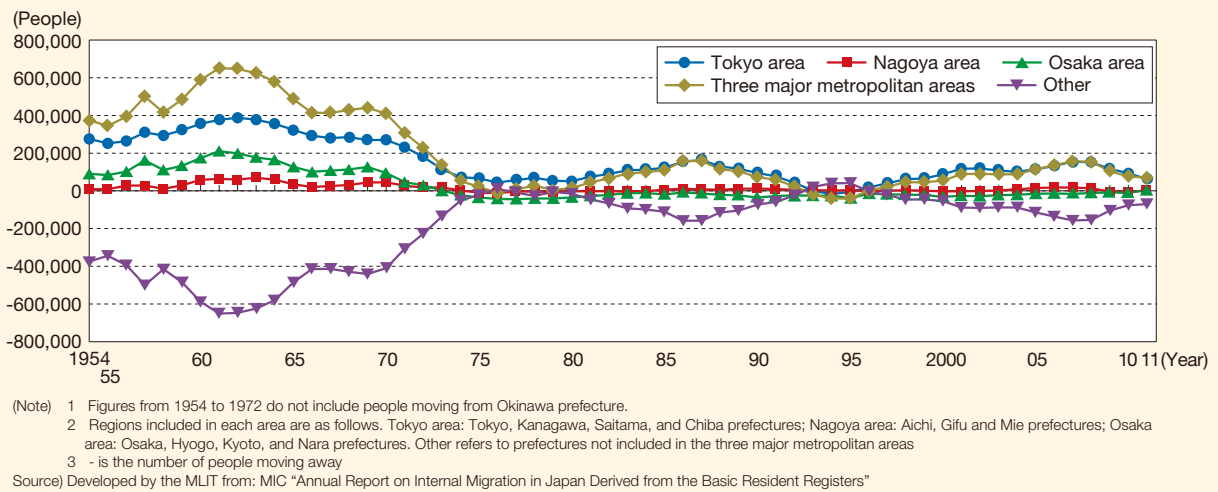
(Reference)

- Population: Census of applicable year; Retirement age: Age when payments from current pension system starts; Death: Future lifespan chart of men and women by age; medium-variant assumptions (average life expectancy at age 30) from IPSS "Population Projection for Japan (Estimated January 2012)"; Similar "Household Projections for Japan (Estimated January 2013)"; Estimates based on premises below
- Schooling period: Assumption based on trends in high school/university enrollment rates; Marriage: Assumption from recurrent trend in average age at first marriage, Child birth (1st/2nd children): Assumption from recurrent trend in average age of woman at birth of 1st/2nd child
- The population numbers of each life cycle within the graph was calculated from premises below, and reflected in the width of the band
- Single (Never married): Assumption based on average number of unmarried people aged 45-49 and 50-54 from IPSS "Population Statistics (2010 version)" and "Household Projections for Japan (Estimated January 2013)" applied to population of people aged 30; Married couple: Assumption based on average number of married couple only households (Totals from age groups 30-34, 35-39, and 40-44 years old) from "Household Projections for Japan (Estimated January 2013)" applied to population of people aged 30; Family with children: Assumption calculated from percentages of total number of married couples with children households and single-parent with child households (Totals from age groups 30-34, 35-39, and 40-44 years old) from "Household Projections for Japan (Estimated January 2013)" applied to population of people aged 30

(2) Trend in Residence Areas
(Population Movement from Rural Areas to Metropolitan Areas Continues but Scale is Decreasing)

After WWII, Japan's cities at times has had an influx of population from rural areas, and at other times sent the population out to rural areas, developing with expansion and contraction of scale. After WWII—particularly during the process of rapid economic growth—with the rise in income levels in urban areas following the changes in the industrial structure, the population density shifted to the three major metropolitan areas from rural regions as people looked for better employment opportunities and higher wages. Since then, from the 1970's as the period of rapid economic growth came to an end and the income gap between the metropolitan and rural areas lessened, the press of people moving from the rural areas eased, and the excess numbers of people moving to the three major metropolitan areas decreased. In the 1980's, with the economic expansion, the population influx in the Tokyo metropolitan area increased again, and at the time of the economic bubble burst in 1987, the number of people that moved to Tokyo was over 0.16 million. However, with the recession following the bubble burst the numbers of people moving to Tokyo decreased again, and by the first half of the 1990's switched to people moving out of Tokyo. However, the latter half of 1990's saw another influx of people coming into Tokyo, and by 2007 the population level was back to what it was before the bubble burst. Since then, though the scale of the influx has become smaller, the population movement into Tokyo continues (Graphic 86).

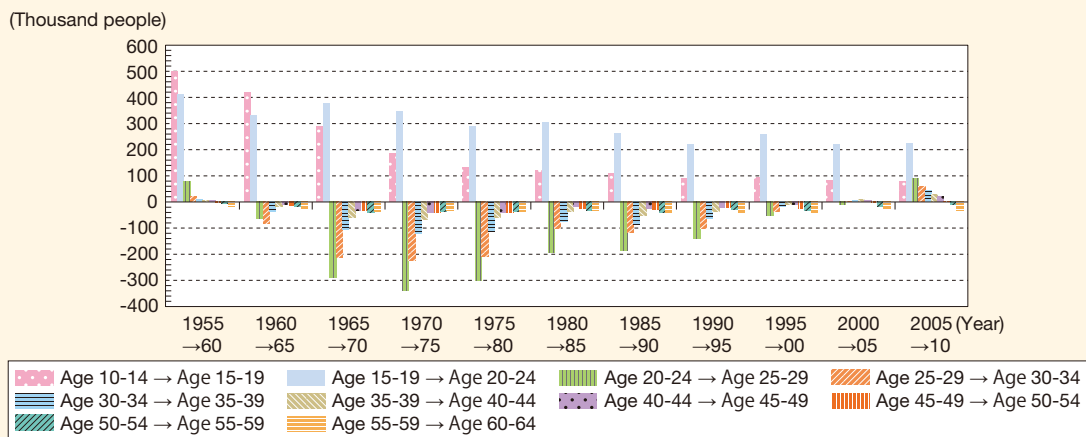
Graphic 86 Trend in Population Influx



There may be several reasons for this type of regional transfer movement occurs. One of the main reasons being economic, with people moving to look for wealthier employment opportunities and higher levels of income. Other reasons include academic pursuits, marriage, buying of property, and other societal reasons related to life cycle. Another possibility is a demographic reason, where the movement of people may depend on the volume of the population in their younger years, when people are most likely to be active in moving around for economic and societal reasons. In regards to the Tokyo area, where the population influx continues, we will analyse the trends in population changes in the Tokyo area by age group, as the trend in the inflow and outflow of young people significantly affects overall population changes.

For Tokyo prefecture, during the first half of the rapid economic growth period between the latter half of the 1950's to the 1960's, there was a major influx of people in their late teens and early 20's. Since then, the influx of this age group into Tokyo has continued, but at a smaller scale, particularly with a significant decline in the number of people in their late teens. While the influx of people in their late teens reached approximately 0.50 million from 1955 to 1960, the number has decreased to around 0.08 million from 2005 to 2010 (Graphic 87).^{Note}

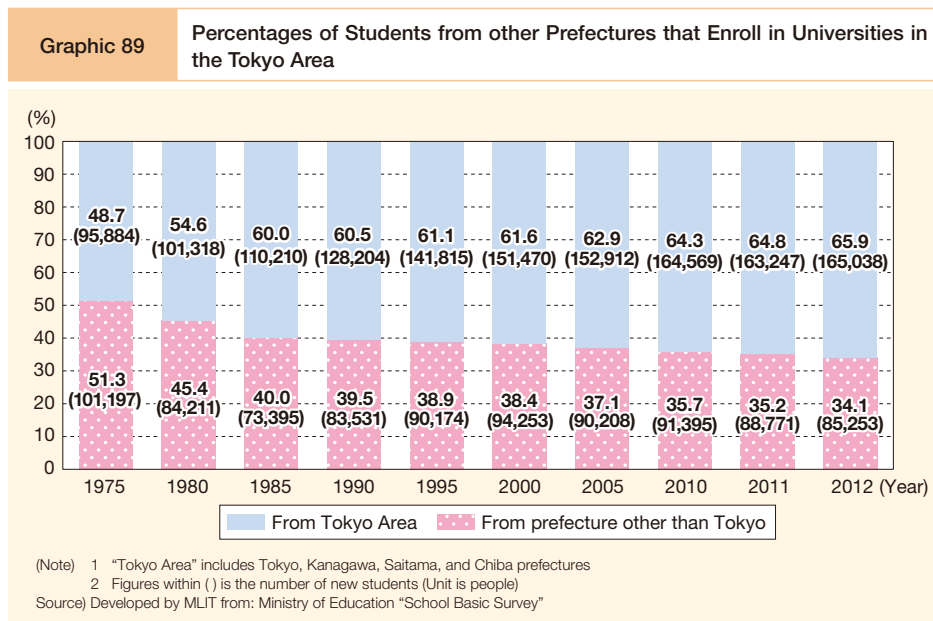
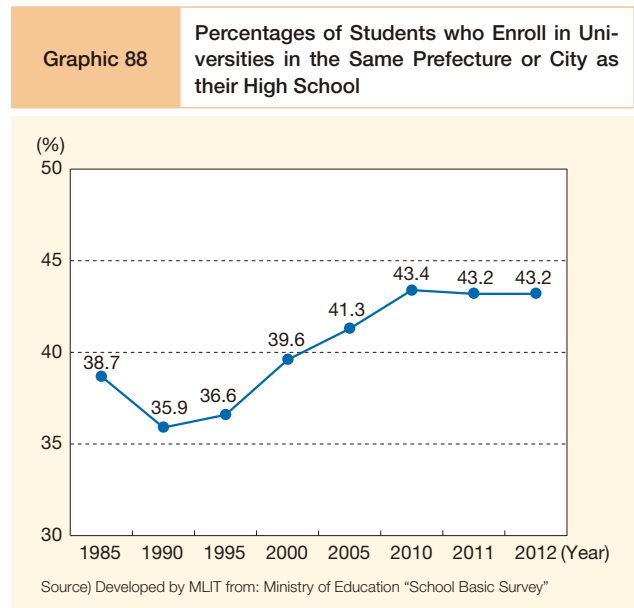
Graphic 87 Trend in Population Increase by Age Group (Tokyo)



Note As evident from the graph above, by comparing the population of groups of same aged people at two points, we can see that the totals of social and natural increases in the population of young people appears as the change in population level. As the natural increase seems to be minimal compared to the social increase and decrease, we shall treat the change in population as change due to social affects, and analyse the trend in influx and departure of the population accordingly (Graphic 87, 90).

(Rise in Intention to Enroll in Local Universities)

There are several reasons to explain this decline in the number of young people moving to Tokyo. Aside from the economic reasons mentioned in the previous paragraph, there is also a heightening of locally-oriented spirit in the rural areas. Looking at the trend of the population that move to a different region for academic pursuits, there is a rise in the percentage of students who enroll in universities in the same prefecture or city where they went to high school, contributing to the decline in the percentage of students who move to Tokyo from rural areas (Graphic 88, 89).



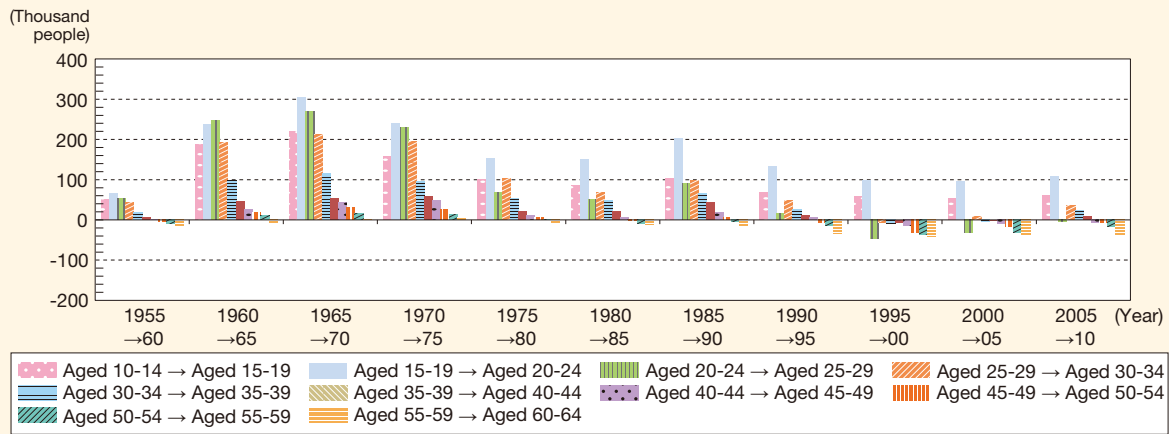
(Decrease of People Moving to One of the Three Prefectures Neighbouring Tokyo)

There has been a change in trend in the departing population, as well the influx population. From the latter half of the 1960's to the 1970's, a large number of the population between the ages of late 20's to 30's moved out of the Tokyo city area. In the 1970's the number of people leaving Tokyo reached 0.3 million people from the population in their late 20's and 0.2 million people in their early 30's. From the 1980's, though the population departure from Tokyo continued, it was a much smaller scale, until by the later 1990's the number had dropped to 0.051 million people in their late 20's and 0.036 million people in their early 30's, and 0.018 million people in their late 30's. In the 2000's, the population of people in their late 20's to 30's again began to move in to Tokyo, and there developed a pattern of people who "Move to Tokyo in their late teens or early 20's, then move back out of Tokyo in late 20's and 30's", which was a major change in the consistent postwar population movement of the young generation (Graphic 87).

There is a link between this movement of the population departing from Tokyo and the population moving in to the three prefectures neighbouring Tokyo (Chiba, Saitama, Kanagawa). We can observe from the number of people aged late 20's to 30's that moved out of Tokyo in the latter half of 1960's to 1970's, and the population influx of the people in the same age group into the three neighbouring prefectures (Chiba, Saitama, and Kanagawa), that a majority of the population

that left Tokyo moved to the neighbouring prefectures. This was also evident in the resident transfer survey results in the “Census”. In particular, the population movement from Tokyo to the neighbouring prefectures around the 1970’s was significant (Graphic 90, 91).

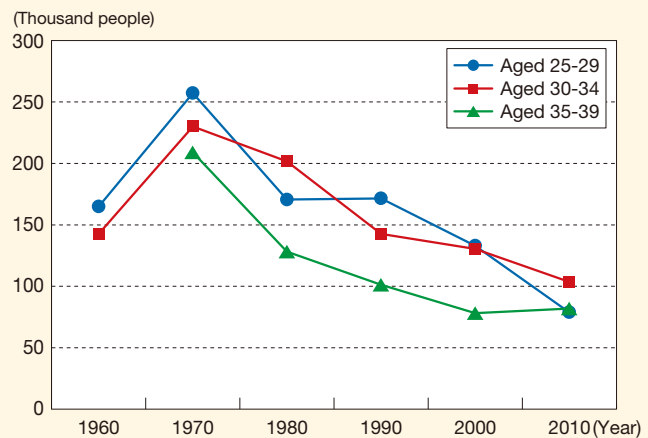
Graphic 90 Trend in the Population Increase/Decrease by Age Group (Three Prefectures Neighbouring Tokyo)



The population movement of people aged late 20’s to 30’s from Tokyo to the neighbouring three prefectures from the latter half of 1960’s to the 1990’s is related to the trend in buying homes. From the end of WWII to early 1970’s, finding housing in Tokyo became a major challenge due to the enormous population influx into the Tokyo area. This led to a rapid rise in housing construction and land development in the suburban areas of Tokyo, such as the Tama New Town developments in the Tama area (Construction started in 1966, occupancy started in 1971). This was reflected in the number of new housing starts in the Tokyo area, which reached its peak in 1972, towards the end of the rapid economic growth period, with over 0.6 million homes (Graphic 92). This shows how the population of people aged late teens to early 20’s, who moved to Tokyo for academic or employment reasons, started to move out to the suburbs of Tokyo and to the three neighbouring prefectures to buy housing when they reached ages of later 20’s and 30’s.

In contrast to this movement, as mentioned in an earlier paragraph, the characteristic of the population of young people of 2000’s in Tokyo, is that there remains an excess influx population of people in their later 20’s and 30’s. This may be due to an increase in the number of people who moved to Tokyo in their teens and early 20’s deciding to stay in Tokyo, and a population of people who moved to Tokyo in their later 20’s and 30’s. The background for this is that land for building large-scale apartment complexes became easier to purchase, due to falling property value and businesses letting go of their properties. This made the housing supply rise, particularly in Tokyo, which helped the population remain in Tokyo (Graphic 93).

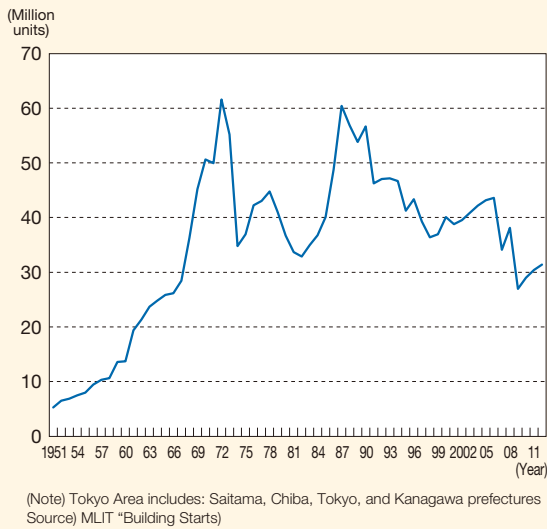
Graphic 91 Population Movement from Tokyo to the Three Neighbouring Prefectures



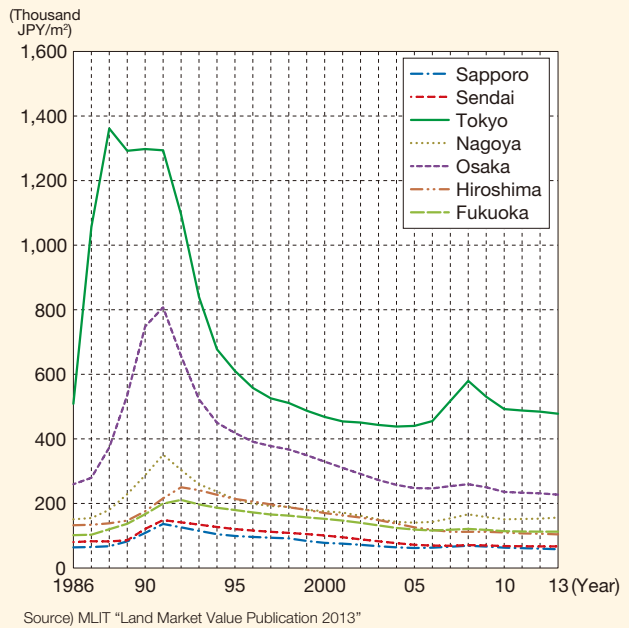
(Note) 1 Figures for 1990, 2000, and 2010 created based on “Residency region 5 years ago”. Since the estimates from 1960 are from figures based on “Residency region 1 year ago”, the numbers have been multiplied by 5. Figures for 1970 was based on “Previous residency region for people who moved to current residency after January 1965”, while figures for 1980 was based on “Previous residency region for people who moved to current residency after October 1975”.

2 Regarding the population movement of people aged 30-34, because the census in 1960 did not have a category for people aged 30-34, data from people aged 30-39 was used. For the population movement of people aged 35-39, because the census in 1970 did not have a category for people aged 35-39, data from people aged 35-44 was used.

Graphic 92 Trend in Number of New Housing Units (Tokyo Area)



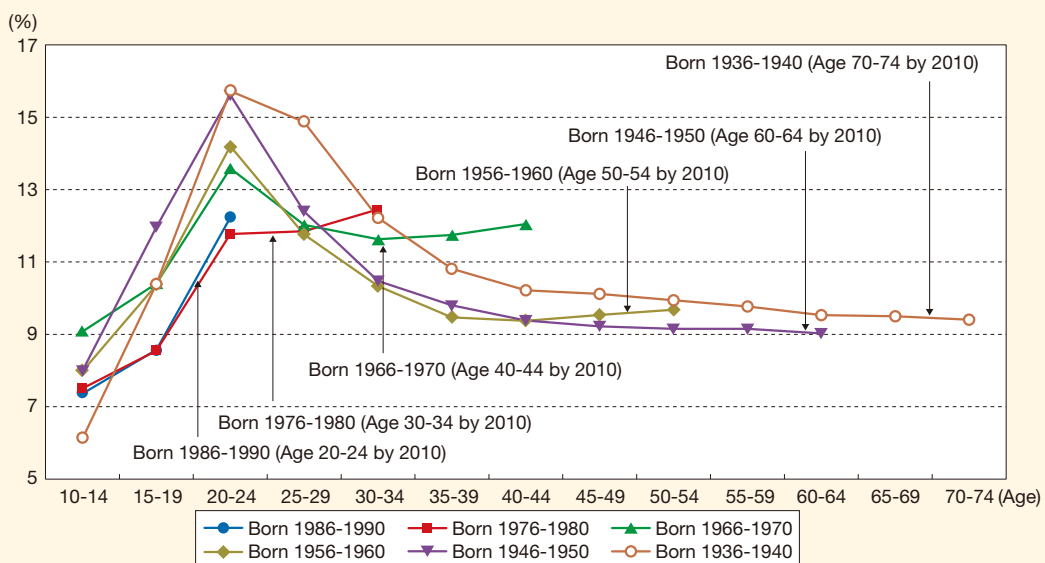
Graphic 93 Trend in Average Housing Prices by Major Metropolitan Areas



(Rise in Percentage of Population Residing in Tokyo)

In recent years, the continuing population influx of the late 20's to 30's age group, in addition to the late teens to early 20's age group, seems to show that in the younger generations, there is a rising percentage of the population who reside in Tokyo as they get older. If we look at the population percentages of people that reside in Tokyo by generation, in generations born before 1966 to 1970, the percentage of Tokyo residents peaks at age 20 to 24 years old, then decreases. In generations born between 1976 to 1980, the percentage of Tokyo residents rises as the population age group gets older (Graphic 94).

Graphic 94 Trend in Percentage of Population Residing in Tokyo by Generation



(Development of Urban Recurrence of Residential Distribution)

This concentration of population in Tokyo—the “Urban Recurrence” trend—can be seen in the changes in the population distribution of young people in the Tokyo Area.

In this section, we will analyse the trend in the social rise and fall of the population of young people in the past and present in the Tokyo area, in order to compare the trend in residency location change of past and present young people from their teens into their 20’s, and from their 20’s to 30’s.

More specifically, by comparing the distribution of the population that was in their teens in 1985 (born 1966-1975, aged 37-46 in 2012), and that of the population in their 20’s in 1995, we will be able to see the trend in the societal rise and fall of the current teens-to-20’s population by area. We will also be able to see the trend in the societal rise and fall of the current teens-to-20’s population by area by comparing the distribution of the population that was in their teens in 2000 (born 1981-1990, aged 22-31 in 2012) and that of the population in their 20’s in 2010. Then by comparing the societal rise and fall trends from these two points in time, we will be able to analyse the differences in the past and present trends in residency location changes of young people in their late teens and 20’s.

In the same way, we will compare the population distribution of people in their 20’s in 1985 (born 1956-1965, aged 47-56 in 2012) and the population distribution of people in their 30’s in 1995, and compare the population distribution of people in their 20’s in 2000 (born 1971-1980, aged 32-41 in 2012) and the population distribution of people in their 30’s in 2010. Comparing the societal rise and fall trends from these two points in time shall further clarify the trends in residency location changes of people in their 20’s and 30’s.^{Note}

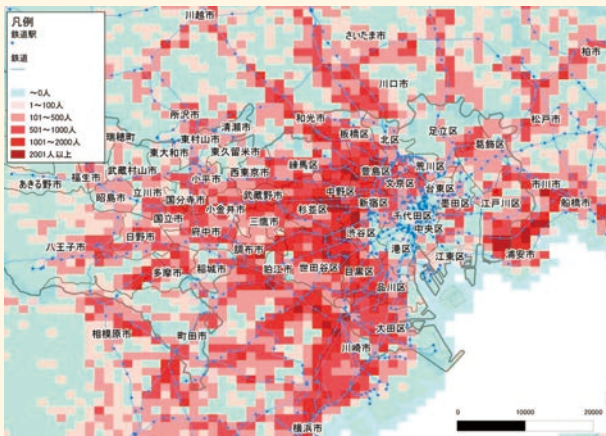
① Population Movement within the Tokyo Area

In the Tokyo area, there is a clearly visible movement of the current young generation choosing to reside in the city center, compared to previous generations of young people. By the time the people who were in their teens in 1985 reached their 20’s in 1995, the population growth concentrated around west Tokyo and extended to places like the Saitama prefecture, which is right next to Tokyo. Within the 23 districts of Tokyo, while growth was seen in places like the Shinjuku and Bunkyo Wards, there was hardly any growth in the three central city wards: Chiyoda, Chuo, and Minato Wards (Graphic 95). In contrast, when the people who were in their teens in 2000 reached their 20’s in 2010, the population saw significant growth in all 23 districts of Tokyo, including the three central city wards, and while some population growth could still be seen in the urban areas of Tokyo and in the three prefectures neighbouring Tokyo, compared to before, the areas where population growth is concentrated has grown smaller; for example along certain parts of the railway system (Graphic 96).

Note Similar to the analysis from Graphics 87 and 90, we will analyse the same age group population distribution comparisons at two points in time. To be more precise, the total of societal rise and fall of the population of young people and natural decrease will show as the change in population. However, because the natural decreasing effect is smaller than the societal rise and fall, in this analysis the change in population shall be treated as being due to the change in societal rise and fall (Graphic 95-114). The Tokyo Datum is used to estimate the change in population distribution from 1985 to 1995, and the World Geodetic Datum is used to estimate the change in population distribution from 2000 to 2010. For convenience, both graphs were created using the World Geodetic Datum.

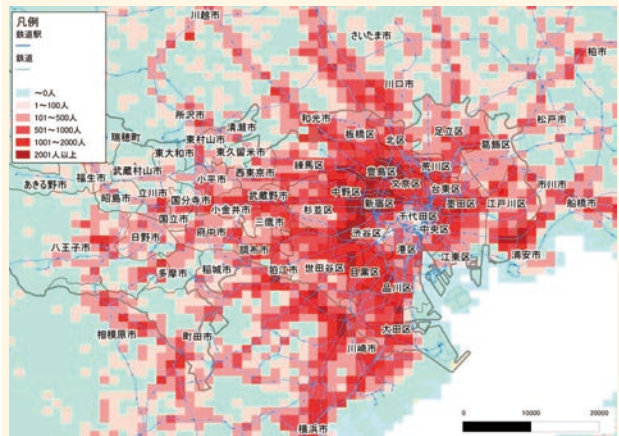
This trend of the population concentrating in the urban central areas is more noticeable in the 20's to 30's age group than in the teens to 20's age group. When those were in their 20's in 1985 had reached their 30's in 1995, aside from a few districts such as the Edogawa Ward, there was hardly any population growth in the 23 wards of Tokyo, while the population grew in an extensive area of the three neighbouring prefectures (Graphic 97). On the other hand, when those were in their 20's in 2000 had reached their 30's in 2010 (the second baby boomer is included in this generation), the most noticeable population growth in Tokyo was in the bay area wards like Koto, Minato, and Chuo Wards, while the population growth in the suburbs of Tokyo and in the neighbouring prefecture was in a much more limited area than before (Graphic 98).

Graphic 95 Societal Rise and Fall of Young Population in Tokyo Area (1985 teens → 1995 20's)



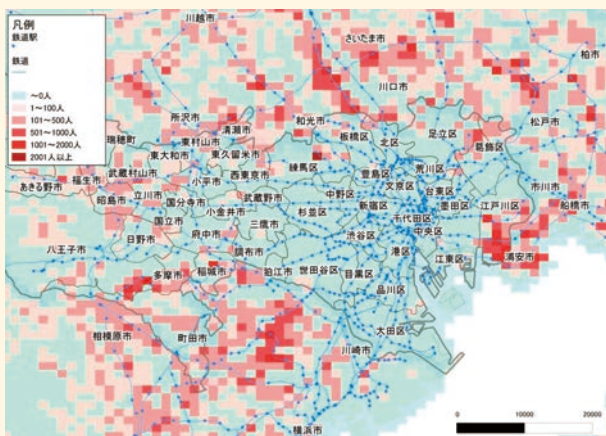
Source) Developed by the MLIT from: MIC "Census"

Graphic 96 Societal Rise and Fall of Young Population in Tokyo Area (2000 teens → 2010 20's)



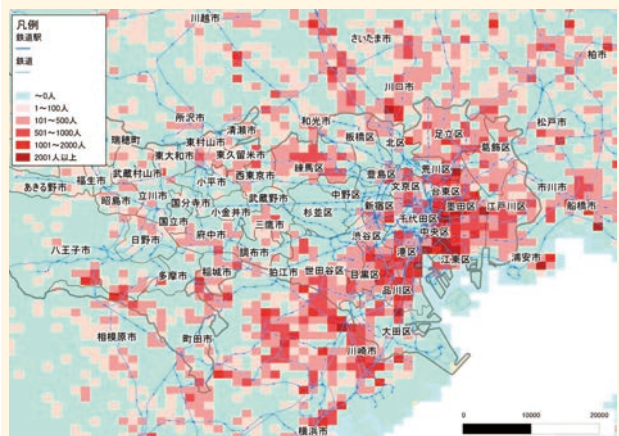
Source) Developed by the MLIT from: MIC "Census"

Graphic 97 Societal Rise and Fall of Young Population in Tokyo Area (1985 20's → 1995 30's)



Source) Developed by the MLIT from: MIC "Census"

Graphic 98 Societal Rise and Fall of Young Population in Tokyo Area (2000 20's → 2010 30's)

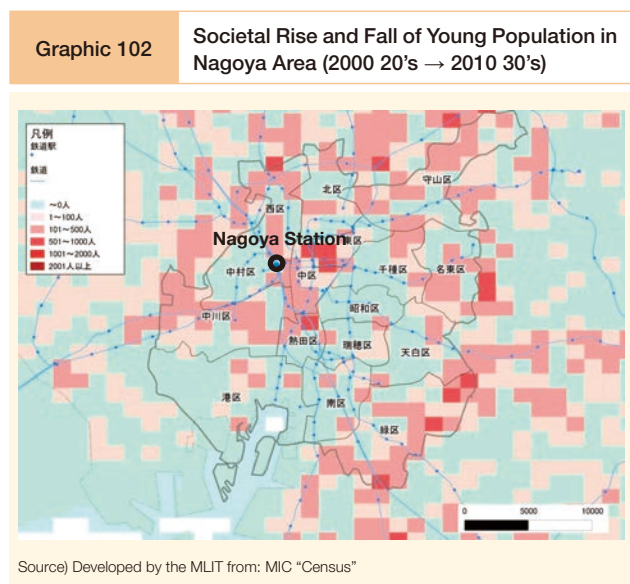
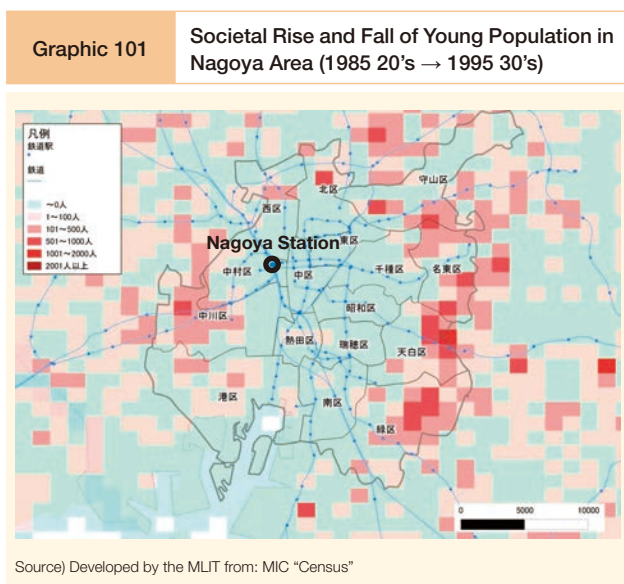
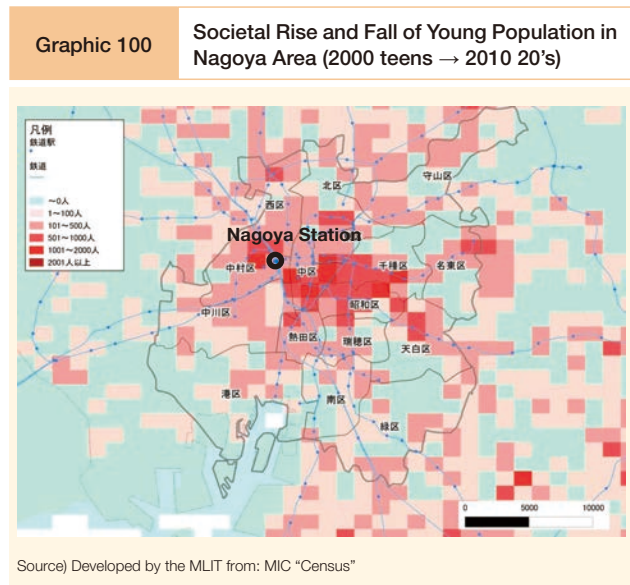
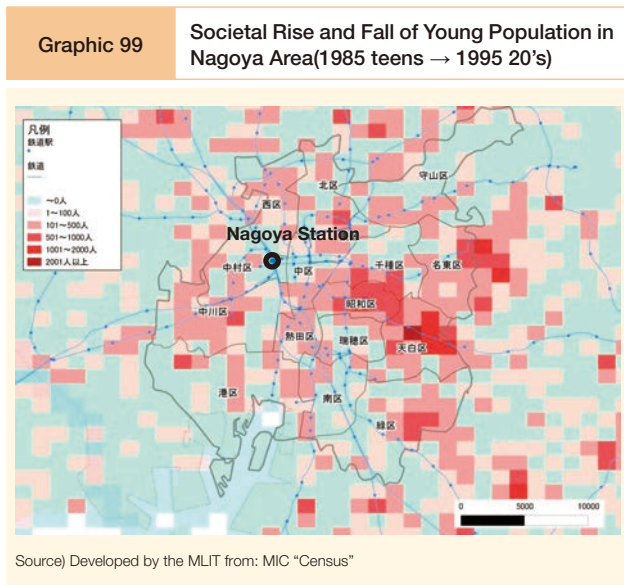


Source) Developed by the MLIT from: MIC "Census"

② Population Movement within the Nagoya Area

This population movement into city centers is evident not only in Tokyo area, but also in other metropolitan areas and urban parts of regional areas. In the Nagoya area, while there was hardly any population growth when those who were in their teens in 1985 reached their 20's in 1995, by the time those who were in their teens in 2000 reached their 20's in 2010, the population growth was concentrated in the wards near Nagoya station, in areas such as the Naka and Nakamura Wards (Graphic 99, 100).

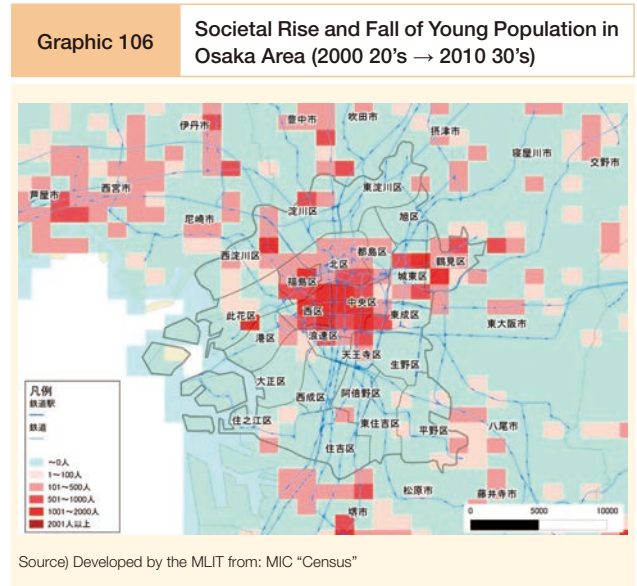
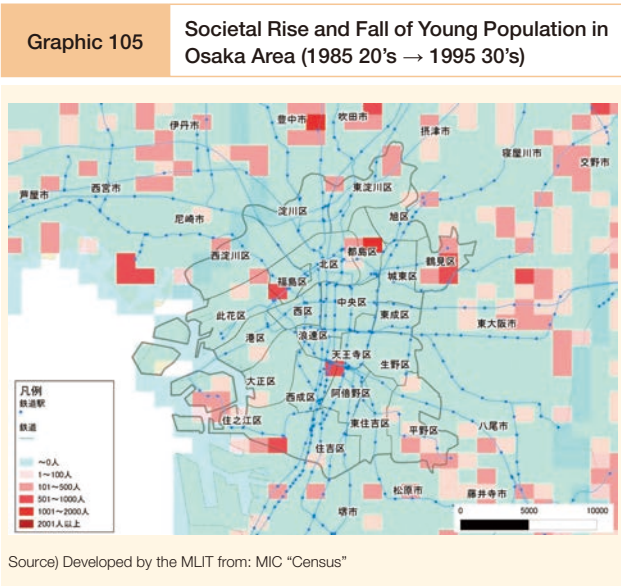
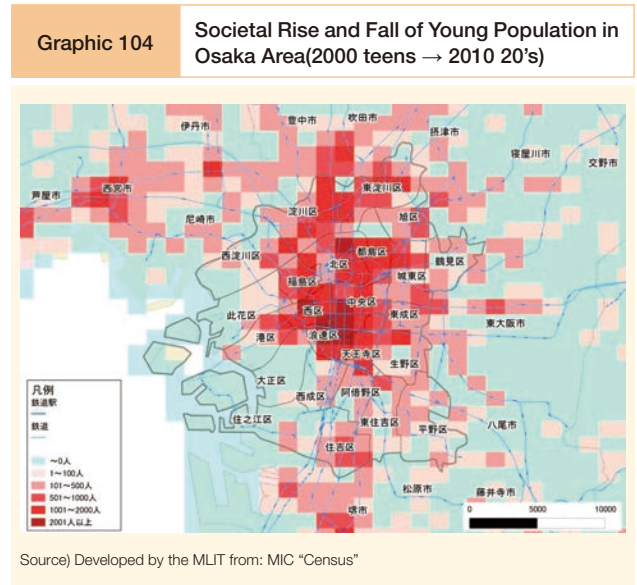
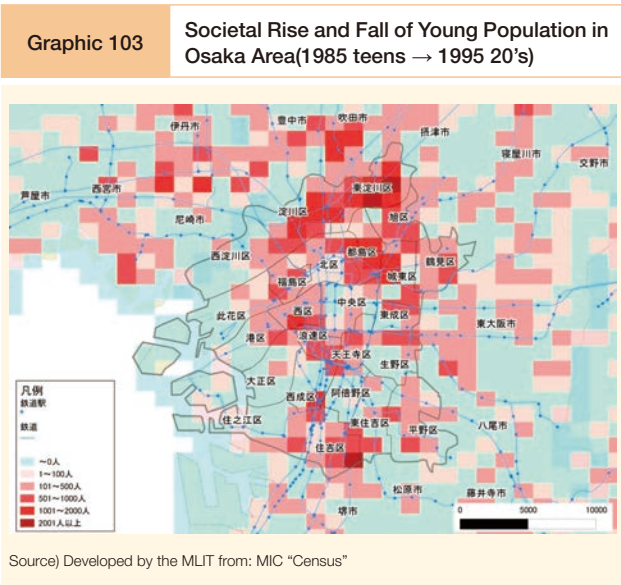
There is a similar population movement visible in the population of people in their 20's and 30's as well, with the population concentration moving to the city centers. When people who were in their 20's in 1985 reached their 30's in 1995, the population growth was noticeable in Nagoya City, cities near Nagoya, and surrounding cities. In contrast, when people who were in their 20's in 2000 reached their 30's in 2010, the population growth was seen in the districts at the center of Nagoya City, like Naka and Atsuta Wards (Graphic 101, 102).



③ Population Movement within the Osaka Area

In the Osaka area, when those who were in their teens in 1985 reached their 20's in 1995, in addition to some population growth in some districts, such as the Miyakojima Ward, there was also some population growth apparent in an extensive area of the surrounding cities of Osaka, and neighbouring prefectures like Hyogo and Nara prefectures (Graphic 103). Meanwhile, when those who were in their teens in 2000 reached their 20's in 2010, the population growth was concentrated in the districts at the center of Osaka proper, such as Chuo, Nishi, and Naniwa Wards (Graphic 104).

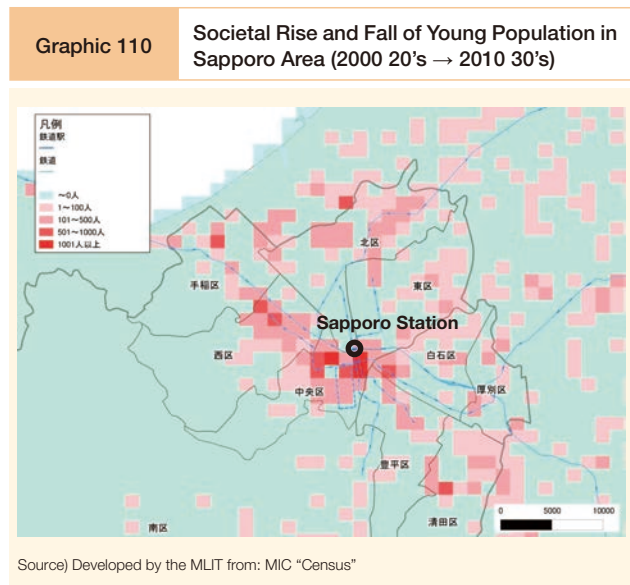
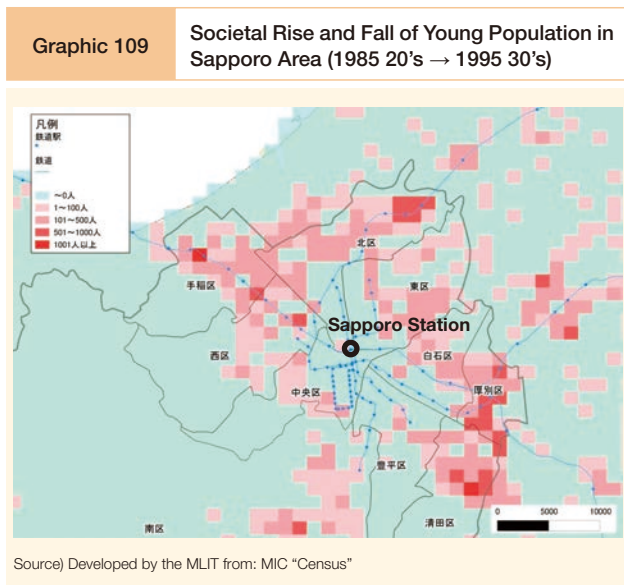
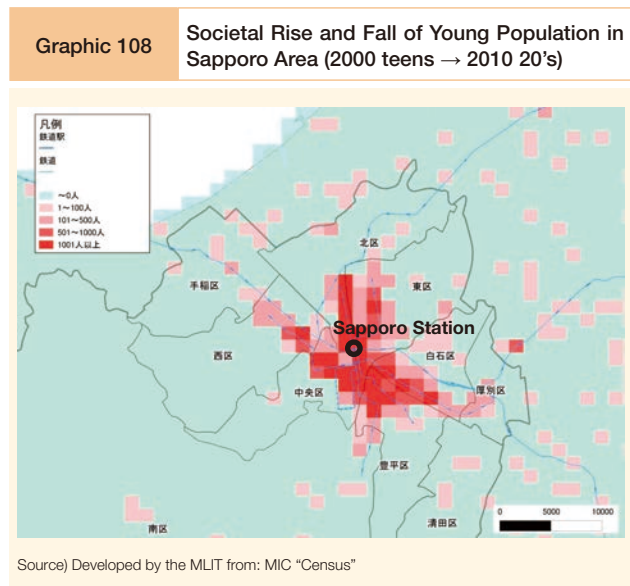
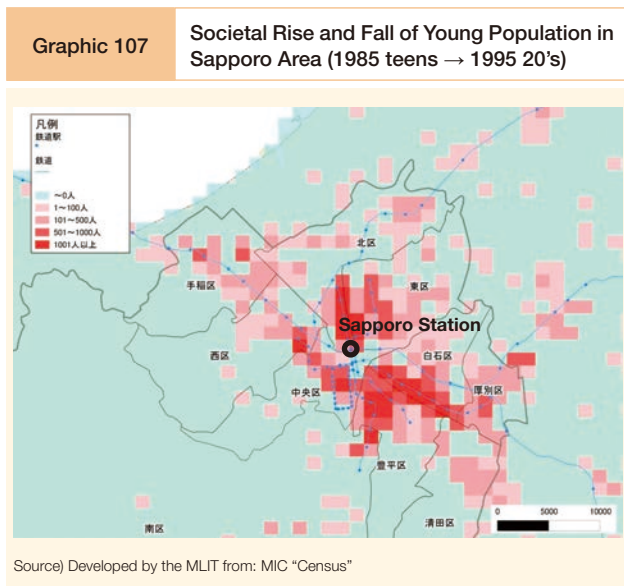
A similar population movement of the concentration moving to the city center is visible in the population of people in their 20's and 30's as well. When people who were in their 20's in 1985 reached their 30's in 1995, aside from a few districts such as the Miyakojima and Tsurumi Wards, the city center area did not see much population growth. However, when people who were in their 20's in 2000 reached their 30's in 2010, there was a noticeable population growth in the districts at the center of Osaka, like the Chuo, Nishi, and Fukushima Wards (Graphic 105, 106).



④ Population Movement within the Sapporo Area

Next, we will look at the trend in city center residence in cities in other regions. In the Sapporo area, when the people who were in their teens in 1985 reached their 20's in 1995, not including the area around Sapporo train station, there was a population growth centered around places near railways like the JR (Japan Railway) lines and subway lines, which extended over a large areas in Higashi, Chuo, Shioishi, and Toyohira Wards. However, when those who were in their teens in 2000 reached their 20's in 2010, it was apparent that the population growth concentration was along subway lines centered around Sapporo station (Graphic 107, 108).

For the population in their 20's and 30's, there is a similar movement of the population concentrating around the central areas. When those in their 20's in 1985 reached their 30's in 1995, there was hardly any growth in areas along the subway lines centered around Sapporo station, but when those who were in their 20's in 2000 reached their 30's in 2010, even in Chuo Ward the most noticeable population growth is particularly evident in the areas near Sapporo station (Graphic 109, 110).

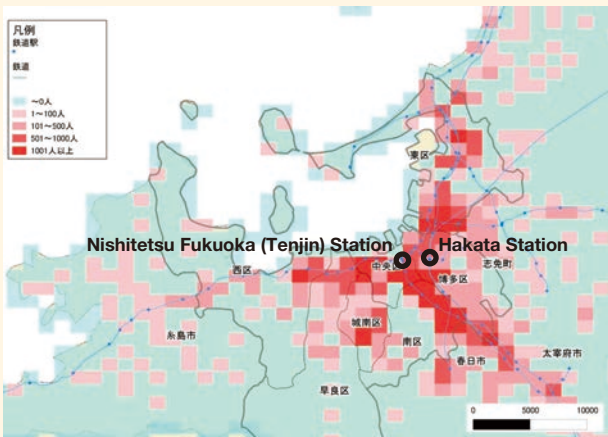


⑤ Population Movement within the Fukuoka Area

In the Fukuoka area, when those who were in their teens in 1985 reached their 20's in 1995, the population growth straddled the railway line and the areas nearby, over places like Nishi, Chuo, Minami, Hakata, and Higashi Wards. When those who were in their teens in 2000 reached their 20's in 2010, the population growth was concentrated in particular near the Nishitetsu Fukuoka (Tenjin) train station and the Hakata train station (Graphic 111, 112).

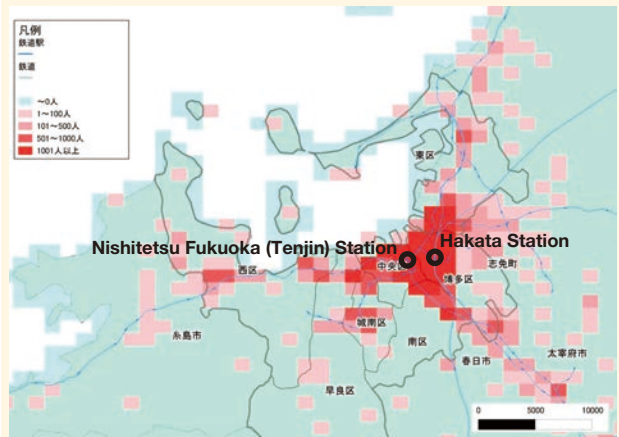
When those in their 20's in 1985 reached their 30's in 1995, there was hardly any population growth in places like the Chuo Ward or the Hakata Ward, but when those who were in their 20's in 2000 reached their 30's in 2010, there was some population growth apparent in a part of the area near Hakata train station (Graphic 113, 114).

Graphic 111 Societal Rise and Fall of Young Population in Fukuoka Area (1985 teens → 1995 20's)



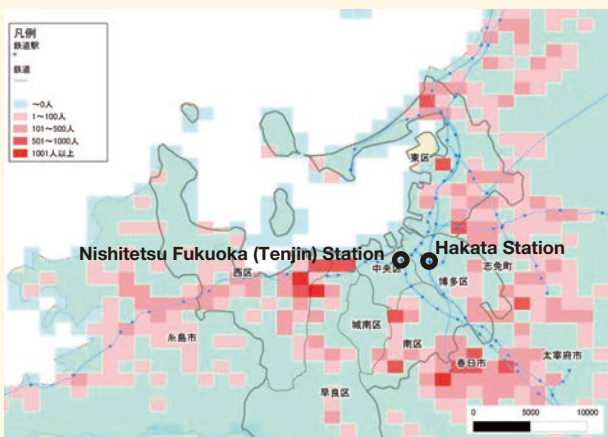
Source) Developed by the MLIT from: MIC "Census"

Graphic 112 Societal Rise and Fall of Young Population in Fukuoka Area (2000 teens → 2010 20's)



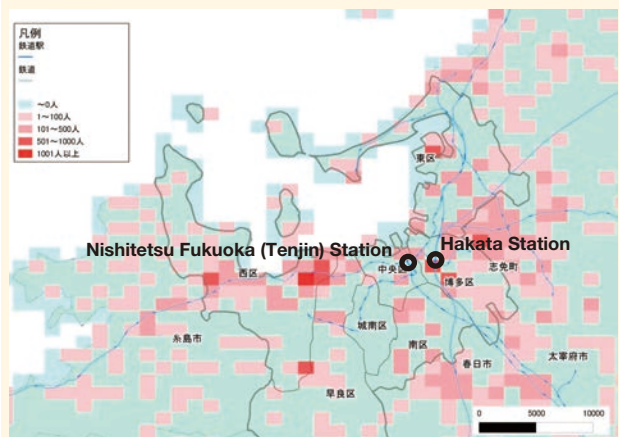
Source) Developed by the MLIT from: MIC "Census"

Graphic 113 Societal Rise and Fall of Young Population in Fukuoka Area (1985 20's → 1995 30's)



Source) Developed by the MLIT from: MIC "Census"

Graphic 114 Societal Rise and Fall of Young Population in Fukuoka Area (2000 20's → 2010 30's)



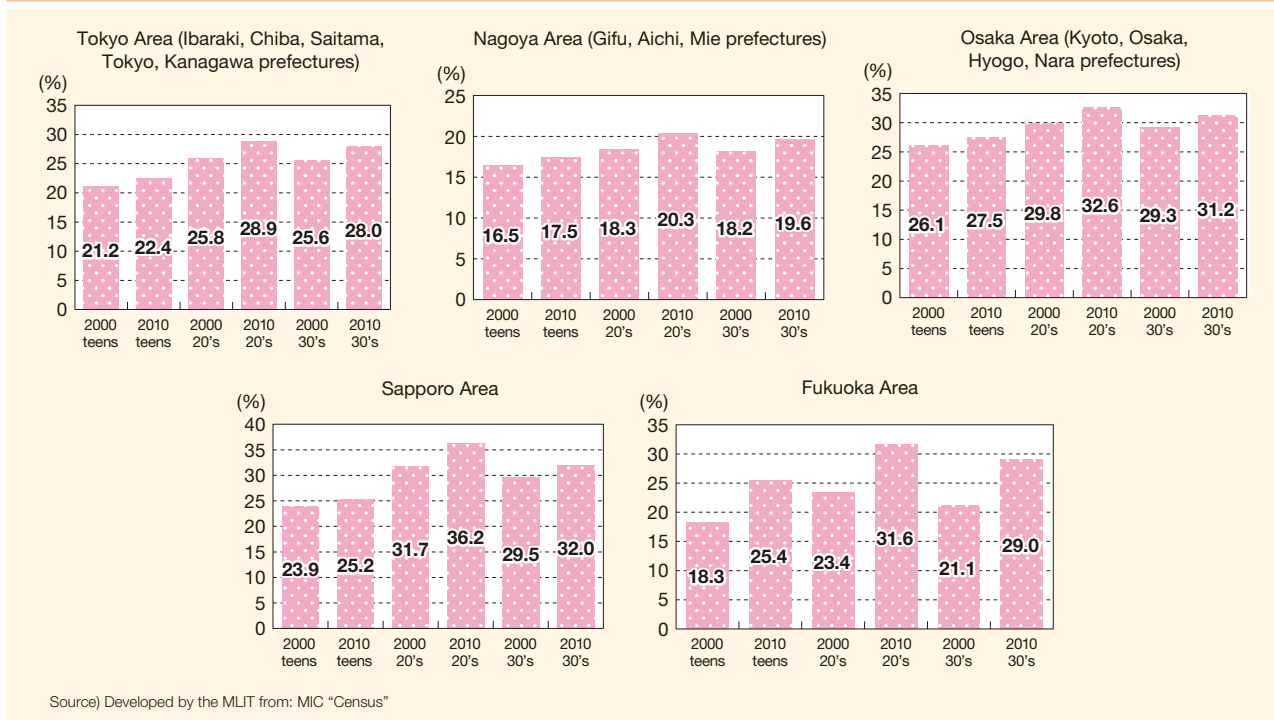
Source) Developed by the MLIT from: MIC "Census"

(Rise in People Residing Near Train Stations)

When looking at the change in the population distribution throughout each metropolitan area, we observed a marked population increase along railway lines. From this we can infer that there are a growing number of people who prefer to live near a train station to make everyday travel and commuting to work or school more convenient. In order to analyse this more closely, we will look at how the percentage of people who reside near a train station has changed by each metropolitan area. Specifically, we calculated the percentages of people who reside within 500m from the center of a train station in the Tokyo, Nagoya, and Osaka, Sapporo, and Fukuoka areas, out of the population of young people (age in their teens, 20's, 30's), at two point in time: years 2000 and 2010.

As a result, we found that for the Tokyo area, the percentage of people who reside within 500m of a train station increased from 2000 to 2010 as follows: for people in their teens, 21.2% to 22.4%, for people in their 20's, 25.8% to 28.9%, for people in their 30's, 25.6% to 28.0%. This shows that there are more and more young people residing in areas near a train station. Similar trends were found in the Nagoya, Osaka, Sapporo, and Fukuoka areas. In particular, the people in their 20's living in the Fukuoka area, went from 23.4% in 2000 to 31.6% in 2010; an 8.2% increase (Graphic 115).

Graphic 115 Percentages of People who Reside within 500m of a Train Station



(3) Residence-related Trends

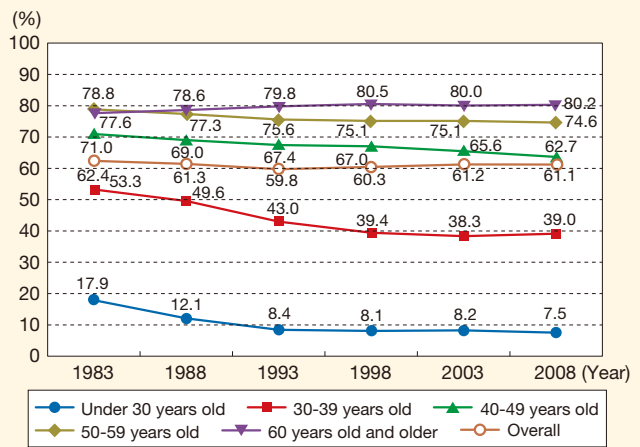
(National homeownership rate in decline, homeownership rate in Tokyo area recovering)

Though the overall homeownership rate has declined from 1983 to 1993, since 2008, the rate seems to be recovering. Throughout this period, the rate has maintained a level at about 60%. If we look at the rate by age groups, homeownership rate for people under the age of 40 has been in an overall decline since 1983. Homeownership rate for people in their 30's has seen a particularly significant drop, from 53.3% in 1983 to 39.0% in 2008 (Graphic 116).

In the Tokyo area, the homeownership rate for people in their 30's dropped from 46.0% in 1983 to 31.3% in 1998. However, since then the rate started to recover, and by 2008 had risen to 36.8%. Homeownership rate for people under age 30 also decreased from 1983 to 1993, but have been recovering since then (Graphic 117).

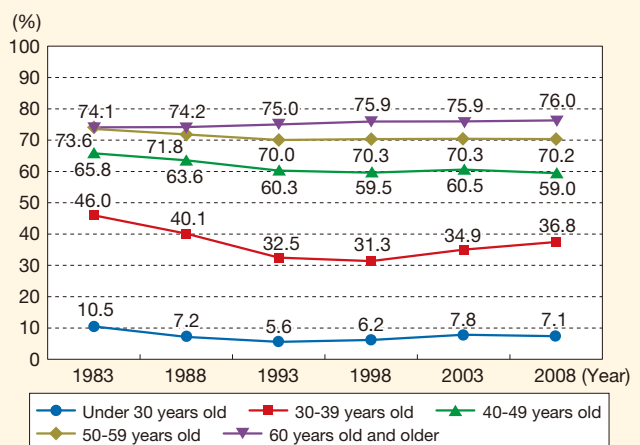
Within the Tokyo area, the homeownership rate seems to be back on the rise, most noticeably in Tokyo proper. While homeownership rate for people in their 30's in Tokyo and the neighbouring three prefectures increased 4.4 percentage points from 1998 to 2008 (from 37.8% to 42.2%), in Tokyo proper, the increase was 7.0 percentage points (from 21.8% to 28.8%), showing that the margin of increase was greater in Tokyo proper (Graphic 118, 119).

Graphic 116 Trend in Homeownership Rate by Age Group



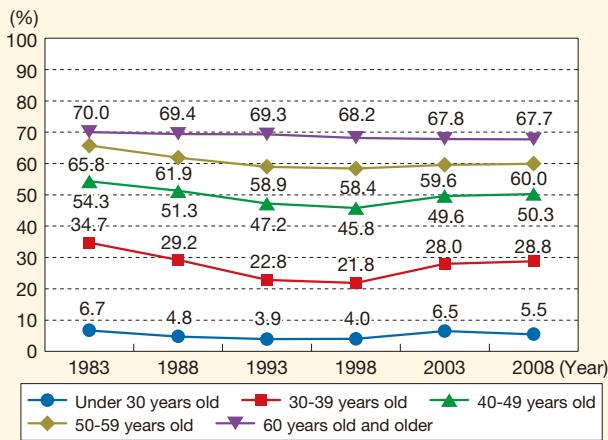
Source) Developed by the MLIT from: MIC "Housing Survey", "Housing and Land Survey"

Graphic 117 Trend in Homeownership Rate by Age Group (Tokyo Area)



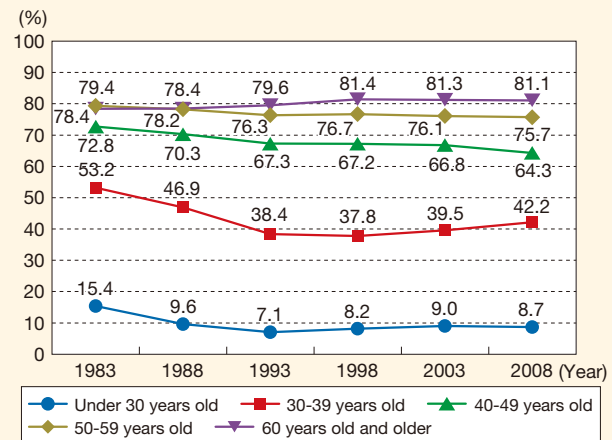
(Note) Tokyo Area: Saitama, Chiba, Tokyo, and Kanagawa prefectures
Source) Developed by MLIT from: MIC "Housing Survey", "Housing and Land Survey"

Graphic 118 Trend in Homeownership Rate by Age Group (Tokyo proper)



Source) Developed by the MLIT from: MIC "Housing Survey", "Housing and Land Survey"

Graphic 119 Trend in Homeownership Rate by Age Group (3 neighbouring prefectures)

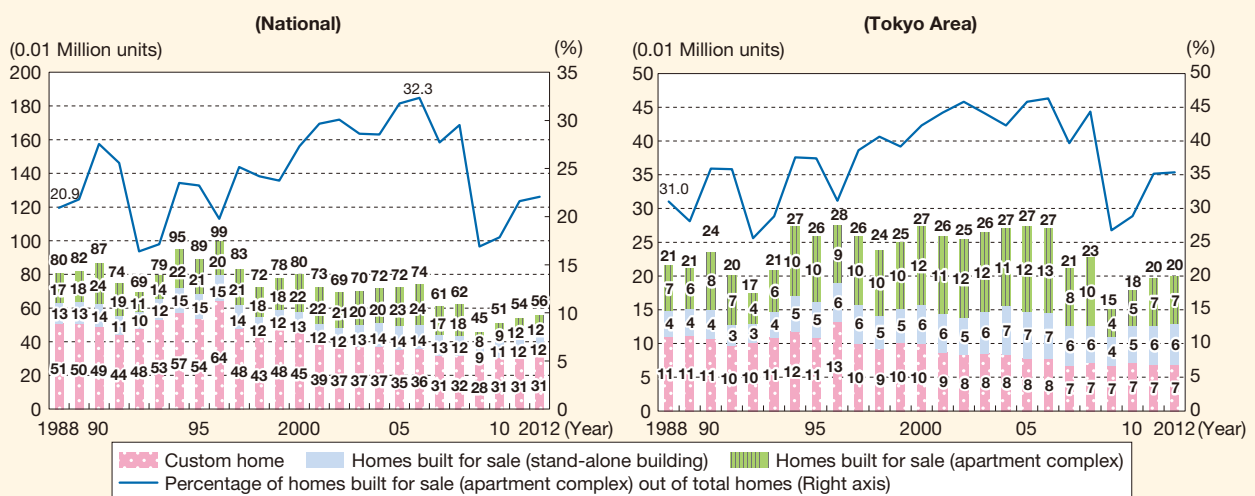


(Note) Neighbouring prefectures: Saitama, Chiba, Kanagawa
Source) Developed by the MLIT from: MIC "Housing Survey", "Housing and Land Survey"

We can see that the recovering homeownership rate in the Tokyo area was supported by the high levels in housing supply from late 1990's to 2000's. The number of new housing construction for privately-owned homes (total number of custom homes and homes built for sale) from late 1990's to 2000's amounted to around 0.25 million units a year, in response to the eagerness of people in the Tokyo area to purchase a home. From late 1990's to 2000's, out of the all the homes built, the supply of homes built for sale (apartments) increased in particular. The percentage of homes built for sale out of all the newly built homes was over 40% of the total (Graphic 120). As a result, the percentage of houses for rent in the new housing constructed in the Tokyo area went from close to 60% in early 1990's down to around 32% by 2000 (Graphic 121).

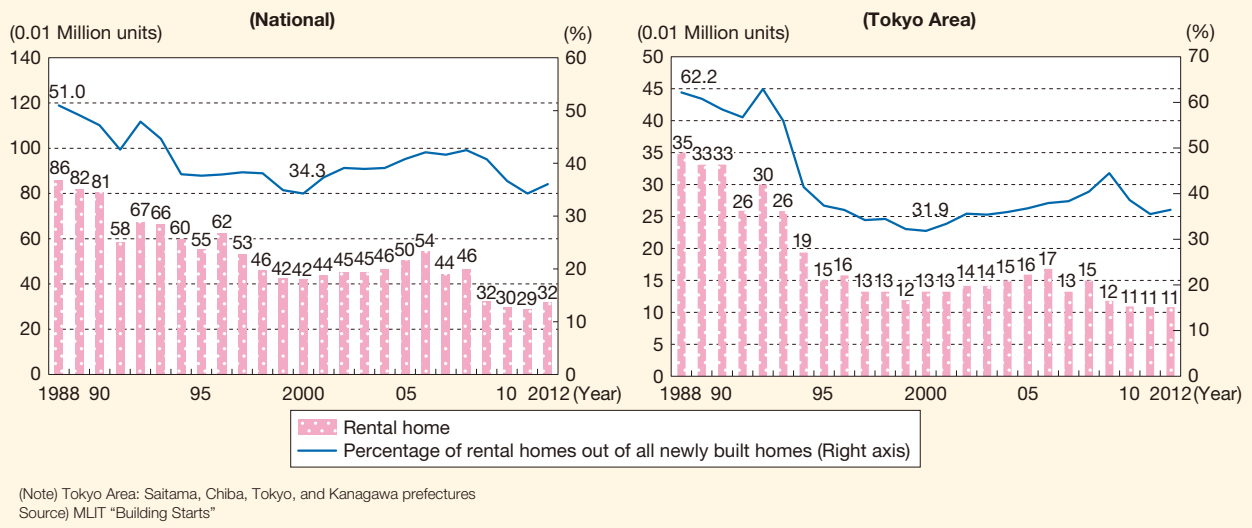
Meanwhile, unlike the Tokyo area, the national number for housing supply dropped approximately 0.69 million units after the economic bubble burst. At one point in mid-1990's this was starting to recover, but again in 2000's the number dropped by 0.70 million units, basically as many as when the economic bubble burst. Furthermore, the percentage of condominium apartments out of the total number of privately-owned homes is much lower overall in comparison to the Tokyo area.

Graphic 120 Trend in Number of Newly Built Private Homes



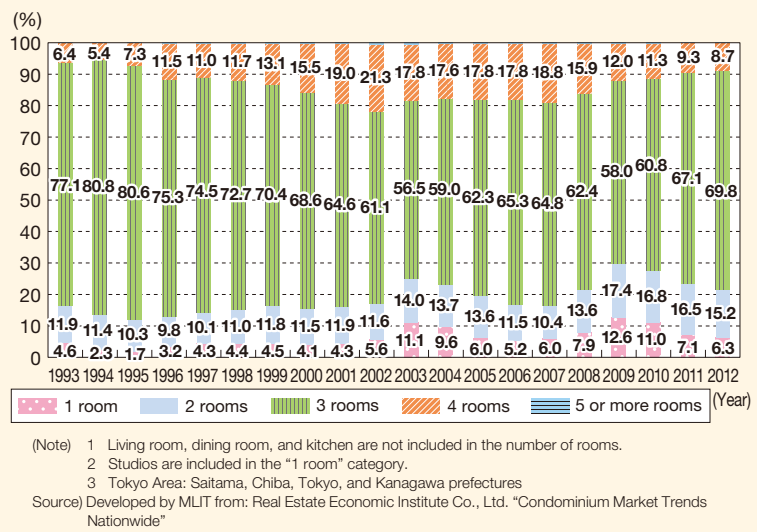
(Note) Tokyo Area: Saitama, Chiba, Tokyo, and Kanagawa prefectures
Source) MLIT "Building Starts"

Graphic 121 Trend in Number of Newly Built Rental Homes

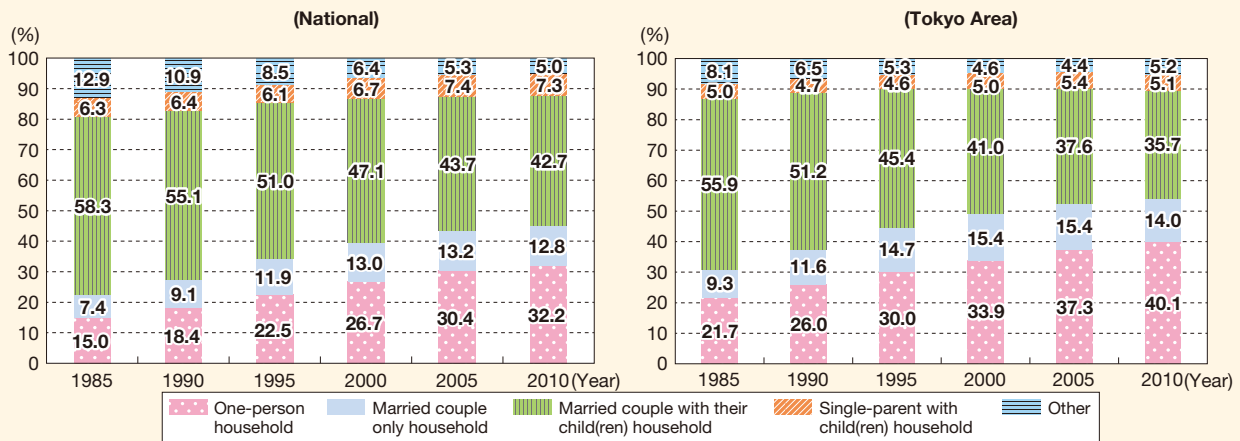


In the Tokyo area, as housing supply level rose from mid-1990's to 2000's, we can see that the type of housing supplied was different from the type of housing previously in supply. If we look at the number of apartment units sold by the number of rooms in the home, since the beginning of 2000's, in the Tokyo area the sales percentage of smaller 1 or 2 rooms is growing steadily, while the sales percentage of places with more than 4 rooms are in decline (Graphic 122). This is attributed to the rise in number of one-person households and couple-only households, as fewer members in households require less space in a home. In fact, the percentage of one-person or couple-only households out of overall households is especially high in the Tokyo area compared to the rest of the country, and the number of people in a household is particularly decreasing (Graphic 123).

Graphic 122 Number of Condominium Units Sold by Type (Tokyo Area)



Graphic 123 Trend in Household Composition (Age of head of household: 30's)



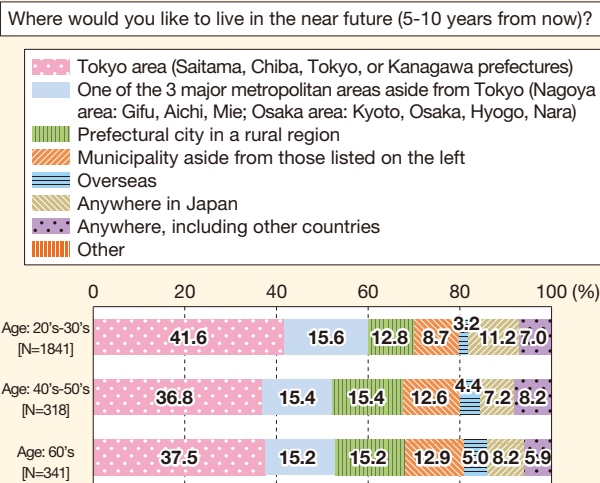
(Note) Tokyo Area: Saitama, Chiba, Tokyo, and Kanagawa prefectures
 Source) Developed by MLIT from: MIC "Census"

The reason for this recovering homeownership rate in the Tokyo area while the national homeownership rate of people in their 30's decline, can be attributed to many aspects, such as change in people's attitude regarding home ownership, demographics movement, changes in the housing purchase environment in the Tokyo area, etc.

① Change in People's Attitude regarding Home Ownership

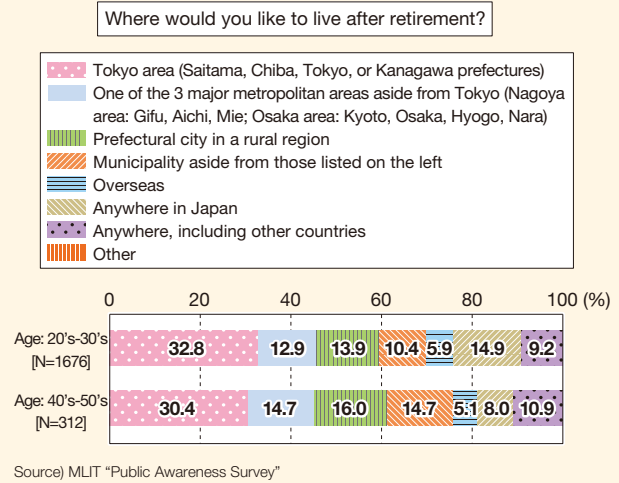
In a public awareness survey, there were questions regarding where the person would like to live—apart from his or her family home—in the near future (5-10 years from now) and where he or she would like to live after retirement. Results showed that among people aged 20's to 30's, there were a high percentage of people who chose the Tokyo area (Graphic 124, Graphic 125). The results from the "Public Opinion Survey regarding the Future of the Country" conducted in 1994 and 2001 showed that the percentage of young people (aged 20's to 30's) who choose a main city in the three major metropolitan areas (23 districts of Tokyo and government designated cities) as the ideal place for residence is on the rise. Even when comparing the past and present young population, we can see that the inclination to reside in a city has heightened (Graphic 126). There is a possibility that the heightened inclination to reside in a city has led to the rising number of people who purchase a home in the Tokyo area.

Graphic 124 Where People Would Like to Reside in the Near Future



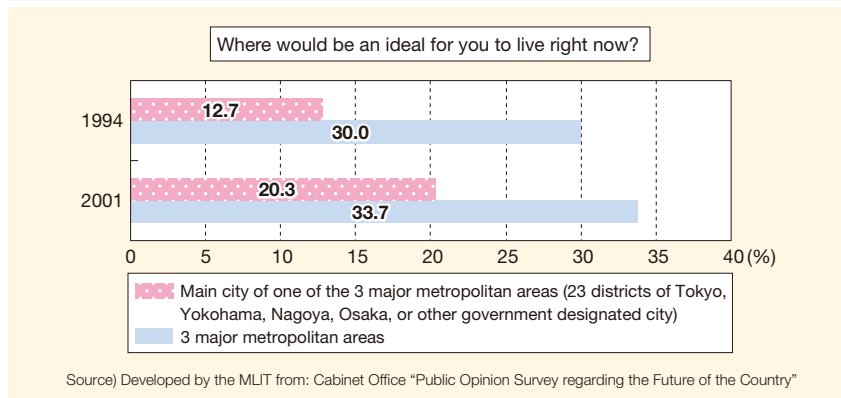
Source) MLIT "Public Awareness Survey"

Graphic 125 Where People Would Like to Reside after Retirement



Source) MLIT "Public Awareness Survey"

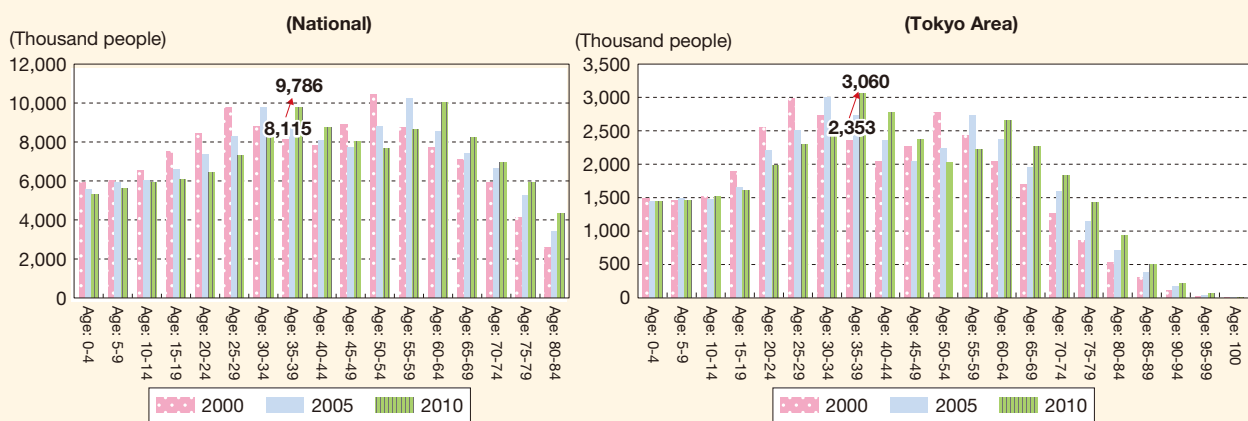
Graphic 126 Young People's Ideal Residence Location



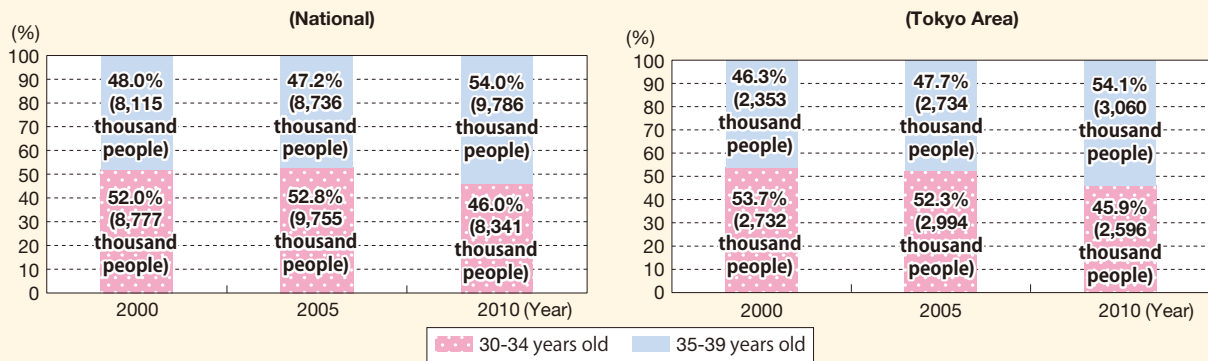
② Affect of Demographics

As a demographic, the main home owners are people in their later 30's and 40's, whose population had increased. The rise in the population growth of people in their 30's may have affected the rise in the percentage of home owners of people who are in their 30's. In particular, after 2008, when the second baby boomer generation (born 1971-1974, aged 34-37 in 2008), who accounts for a large part of the total population, reached their later 30's, as the population of people in their 30's increased, the percentage of home owners in their 30's also increased. It seems possible that the increasing population percentage of people in their 30's—the popular age for purchasing a home—is driving up the statistics for home owners who are in their 30's. In fact, while the national number of people aged 35-39 years old has grown, going from 8.115 million people in 2000 to 9.786 million people in 2010, a 21% increase, the number of people in that age group in the Tokyo area went from 2.353 million in 2000 to 3.06 million in 2010, a 30% increase. This means the 35-39 year old population has increased at a higher rate in the Tokyo area than the national rate (Graphic 127). Even for the percentage of people aged 35-39 years old within the population of people in their 30's, the growth margin in the Tokyo area is higher than the national rate, having gone from 46.3% in 2000 to 54.1% in 2010, a 7.8% increase, while nationally the percentage has gone from 48.0% in 2000 to 54.0% in 2010, a 6% increase (Graphic 128).

Graphic 127 Trend in Demographics by Age Group



Graphic 128 Breakdown of Population in their 30's



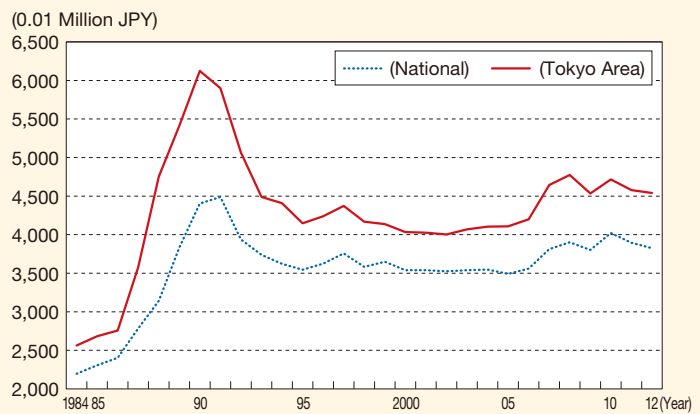
(Note) Tokyo Area: Saitama, Chiba, Tokyo, and Kanagawa prefectures
Source) Developed by MLIT from: MIC "Census"

③ Changes in the Home Purchasing Environment

(A) House prices

The change in house prices in the Tokyo area is also thought to have contributed to the recovering trend in the homeownership rate of young people. From the latter half of the 1980's to the beginning of 1990's, the steep rise in land prices nation-wide drove the house prices up as well. This trend was especially noticeable in the Tokyo area, and when the drop in house prices occurred in the mid-1990's, the drop was even lower in the Tokyo area. From this, we can infer that in the Tokyo area, comparing the period from late 1980's to the beginning of 1990's and the 2000's, the house prices saw a bigger drop relative to the rest of the country, which may have prompted more people to purchase a home (Graphic 129).

Graphic 129 Trend in Condominium Prices

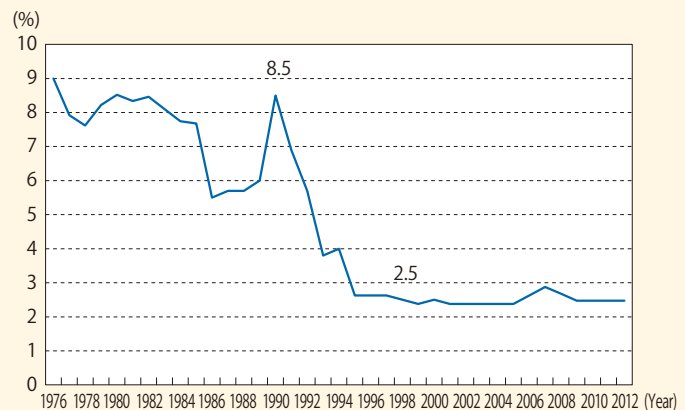


(Note) Condominium prices: Selling price of condominiums sold nation-wide from January to December in a year (As a rule, refers to mid-to-high-rise co-sale private housing with more than three stories. Does not include investment properties, fixed-term lease properties, rental properties, non-residential properties, non-condominium units, shops, or offices).
Source) Developed by MLIT from: Real Estate Economic Institute Co., Ltd. "Condominium Market Trends Nationwide"

(B) Mortgage Rates

The fall in mortgage rates may also be another reason that prompted the young people in the Tokyo area to purchase housing. Mortgage rates reached 8.5% in 1990, during the economic bubble, but dropped to 2.5% in 1998, and remained at around the same level since then (Graphic 130).

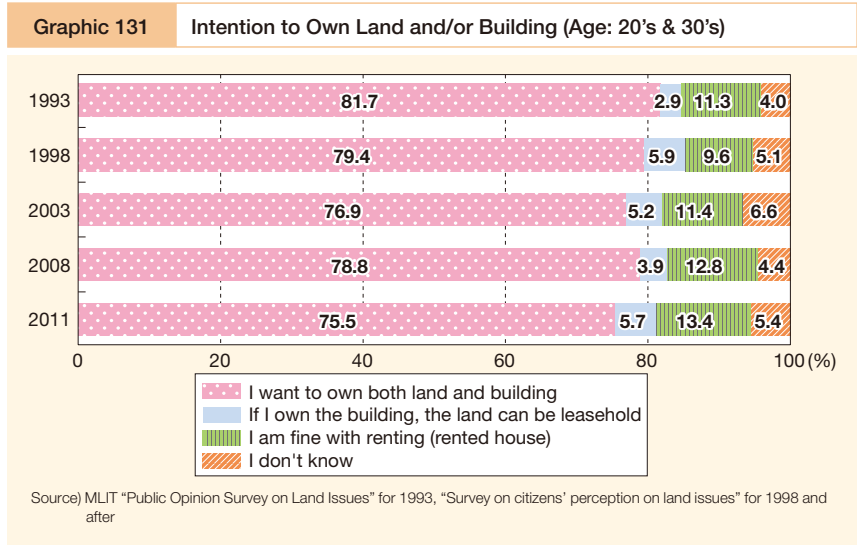
Graphic 130 Trend in Mortgage Rates



(Note) 1 Medium value from variable interest rates from commercial banks (Long-term prime rate-linked floating rate used for before 1993)
2 Interest rates from the beginning of the last month (End of the year interest rates used for before 1993)
Source) Developed by the MLIT from: Bank of Japan "Financial and Economic Statistics Monthly"

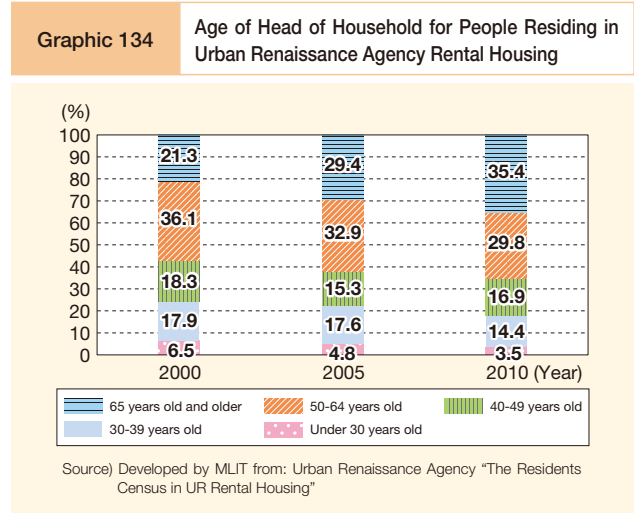
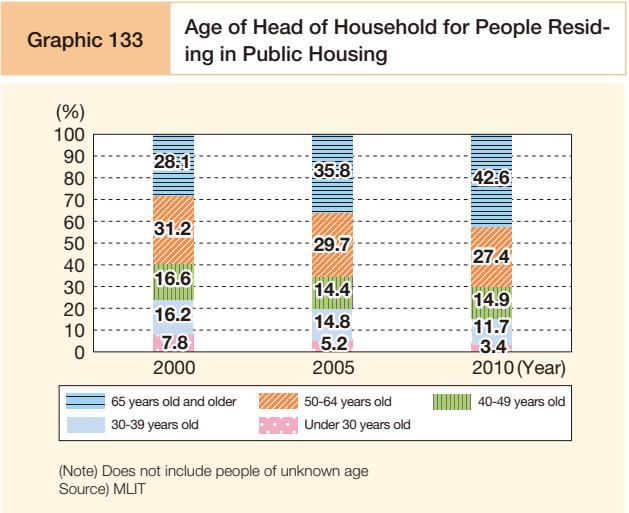
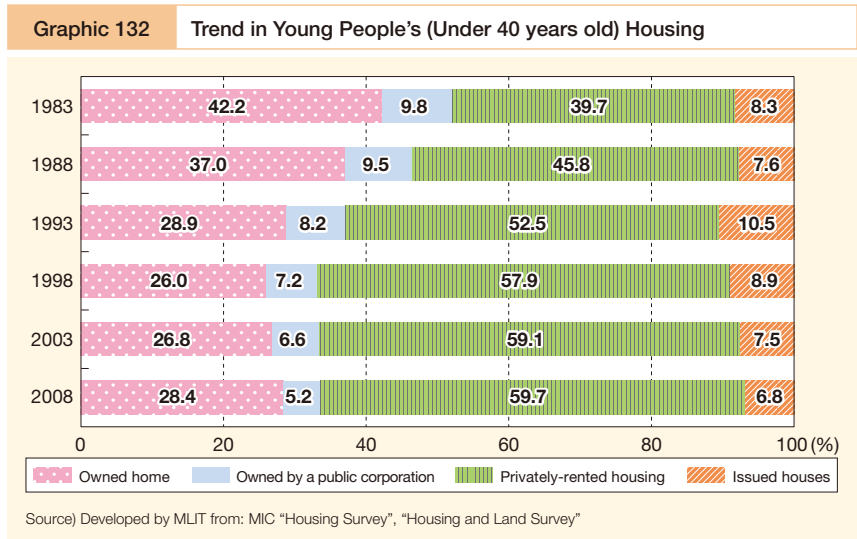
(Intention to Own a Home Remains at High Levels)

The homeownership rate of young people continues to decline nationwide, but when looking at the intention to own land and/or building, though there is a gradual decline in the percentage of people who want to own both land and building, the level of intention remains at high levels of around 80%. Meanwhile, the percentage of people who don't mind renting (rented houses) is slowly but steadily rising (Graphic 131).



(Increase in Percentage of People Residing in Private Rental Housing)

If we look at the trend in young people's households by the home owned, while the homeownership rate is declining as we mentioned in the previous paragraph, the percentage of households that reside in a rented houses is growing. In particular, the percentage of privately-rented housing is rising. The percentage of households residing in housing owned by a public corporation has decreased from 9.8% to 5.2%, and those in issued houses from 8.3% to 6.8% since 1983 to 2008, while the percentage of households residing in privately-rented housing has risen, from 39.7% to 59.7% (Graphic 132). When looking at the percentage of people moving into public housing or Urban Renaissance Agency rental housing by age group, the percentage of young people (under 40 years old) out of the total number of people moving into such housing is decreasing yearly (Graphic 133, 134).

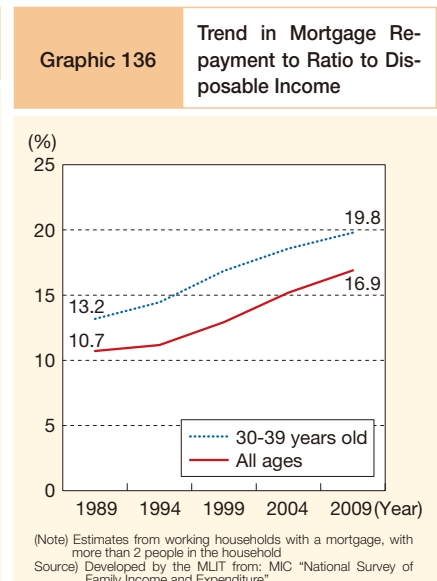
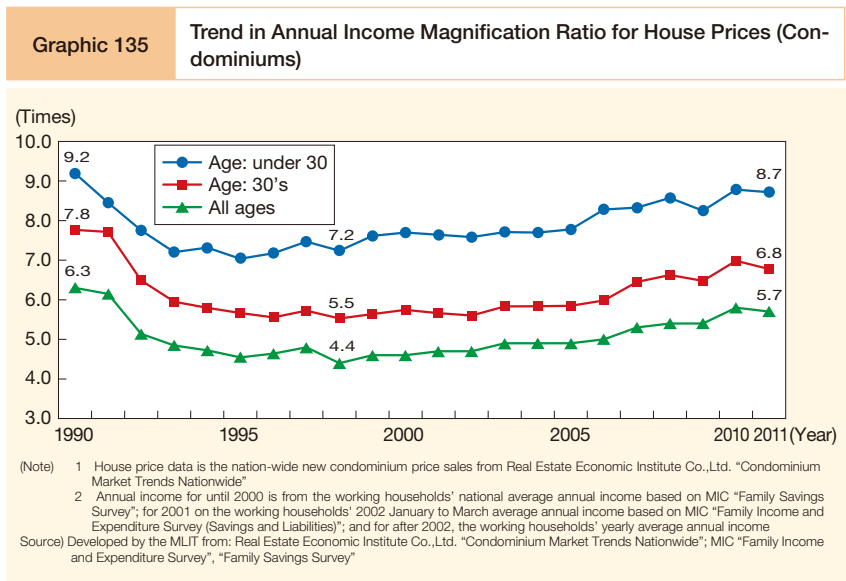


(Increase in Housing Expenses)

① Economic Burden of Owning a Home

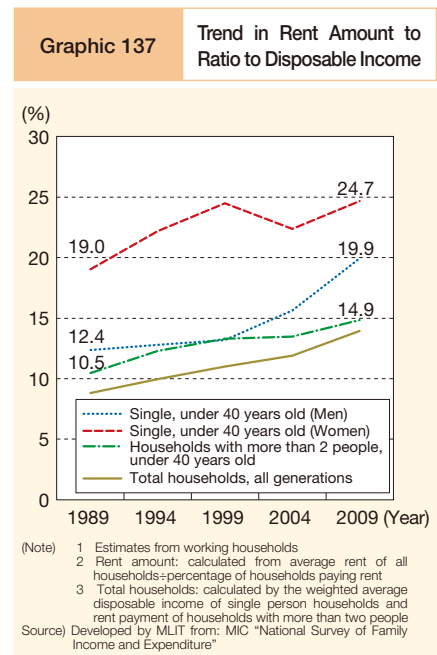
If we look at the annual income magnification ratio of house prices (condominiums) of people under 30 or in their 30's, during the economic bubble, due to high land prices the price of housing (condominiums) rose, to 9.2 times and 7.8 time more by 1990. After the economic bubble burst, until the end of 1990, while housing prices dropped, the annual income magnification ratio also declined, and by 1998 they were at 7.2 times and 5.5 times respectively. However, since then, while the house prices started to rise, the annual income of young people started to decline, making the annual income magnification ratio continue to rise, reaching 8.7 times and 6.8 times by 2011 (Graphic 135).

When looking at the percentage of the mortgage repayments out of total disposable income, the percentage is rising for all age groups, but in the 30's age group the increase is at a higher level. This kind of economic burden that is involved in owing a home is thought to be one of the reason for the aforementioned decline in the homeownership rate of young people (Graphic 136).



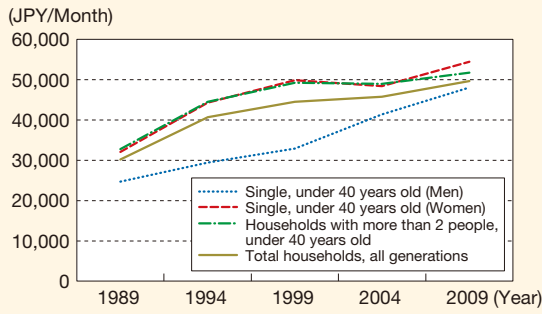
② Housing Expenses of Rented Houses

The rent payment percentage out of total disposable income is also rising. From 1989 to 2009, the rent amount for men under 40 years old went from 12.4% to 19.9% of disposable income, and from 19.0% to 24.7% for women under 40 years old, and from 10.5% to 14.9% for households with more than two people, where the head of households is under 40 years old. From this we can see that housing expense has especially gone up for single person households. Furthermore, it seems that housing expense percentage is at higher levels for women than for men, but this can be attributed to the generally higher levels of housing cost for women, and the fact that women have lower amounts of disposable income (Graphic 137, 138, 139). One of the reasons rent is higher for women than for men is thought to be because women have higher demands and prerequisites for the amenities and specifications, particularly for issues related to safety, to be included in the privately-rented housing.^{Note}



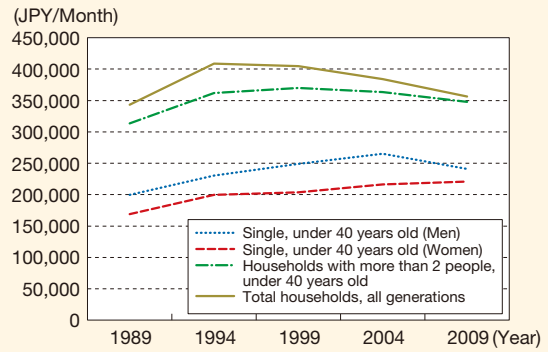
Note When surveying people in their 20's and 30's living by themselves in rental housing in the Tokyo area (Tokyo, Kanagawa, Saitama, Chiba) regarding amenities and specifications that, "must be included" in a rental unit, and which they "would not rent places without," 64.1% of women and 43.7% of men listed the specification of "being on or higher than 2nd floor," and 18.4% of women and 13.6% of men listed the "Auto-lock" function. ("Ranking of 'Must have amenities' and 'Not necessary amenities' for rental units (February 17, 2010)" Created by: SUUMO, Issued by: Recruit Sumai Company Ltd.).

Graphic 138 Trend in Rent Amount



(Note) 1 Estimates from working households
 2 Rent amount: calculated from average rent of all households--percentage of households paying rent
 3 Total households: calculated by the weighted average disposable income of single person households and rent payment of households with more than two people
 (Source) Developed by the MLIT from: MIC "National Survey of Family Income and Expenditure"

Graphic 139 Trend in Disposable Income



(Note) 1 Estimates from working households
 2 Total households: calculated by the weighted average disposable income of single person households and rent payment of households with more than two people
 (Source) Developed by the MLIT from: MIC "National Survey of Family Income and Expenditure"

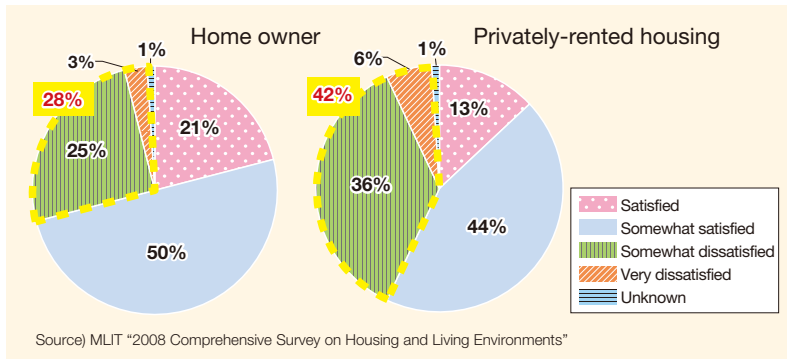
(Difference in Quality between Privately-owned Homes and Rental Housing)

In this section we will compare the differences between privately-owned homes and the rental housing where many young people reside.

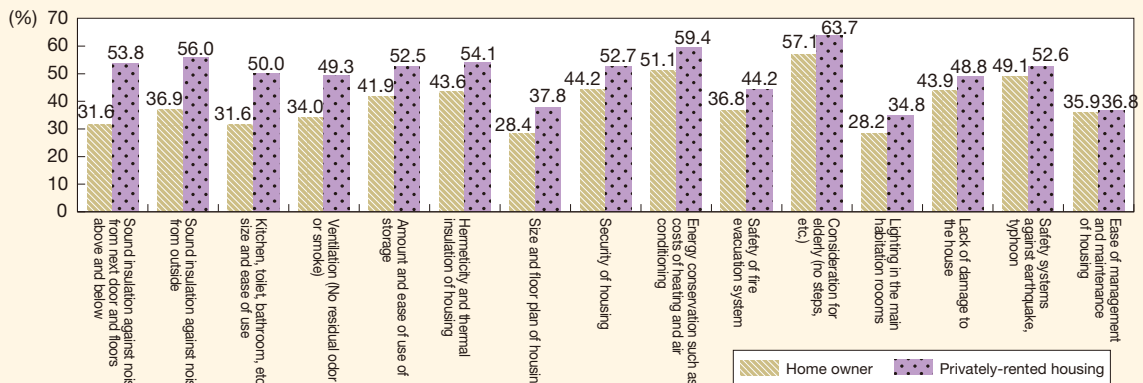
① Evaluation of Privately-owned Homes and Rental Housing

Looking at the evaluation of housing (all ages), the dissatisfaction rate for home owners (percentage of people who answered, "Somewhat dissatisfied", "Very dissatisfied") is 28%, whereas for people in privately-rented housing the rate was at a much higher 42% (Graphic 140). When the dissatisfaction regarding housing was broken down in to items of dissatisfaction, the dissatisfaction rate for people in rental housing was higher as a whole, in comparison to private home owners, especially for sound insulation-related items (Graphic 141).

Graphic 140 Dissatisfaction Rate for Housing



Graphic 141 Dissatisfaction Rate for Housing by Item

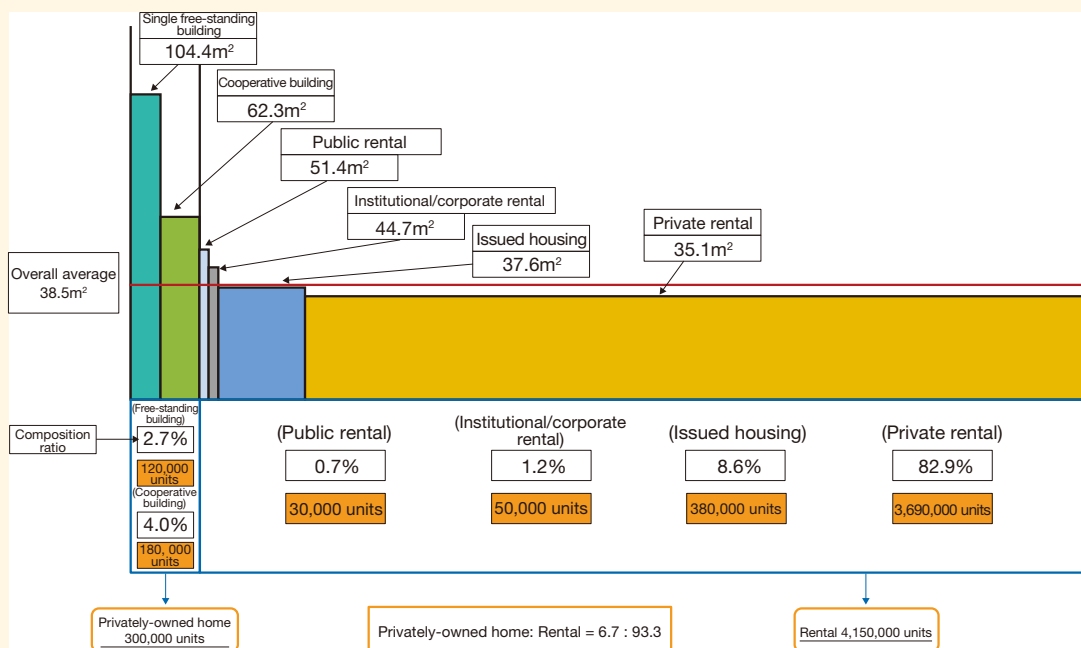


② Square Footage of Housing where Young People Reside

When looking at the single person households of young people (under 40 years old), 6.7% reside in privately-owned homes, and the average square footage of such homes are 104.4m² for single free-standing homes and 62.3m² for cooperative buildings, which means they exceed targeted housing standards for General Residence (55m²) and targeted housing standards for Urban Residence (40m²).^{Note1} Meanwhile, in privately-rented housing, in which 80% of the same population reside, the average square footage is 35.1m², which is under targeted housing standards for Urban Residence (40m²) (Graphic 142).

Of the households of young people with more than two people (where the head of household is under 40 years old), 43.7% reside in privately-owned homes, and the average square footage of such homes are 115.7m² for single free-standing homes and 78.3m² for cooperative buildings, which means they exceed targeted housing standards for General Residence with two people (75m²) and targeted housing standards for Urban Residence with two people (55m²). In privately-rented housing, in which 40% of the same population reside, the average square footage is 55.4m², which exceed just barely targeted housing standards for Urban Residence with two people (55m²) (Graphic 143). However, when comparing the amount of housing with over 50m² against the number of households of young people with more than two people, there are only 1.81 million such households living in housing with over 50m², though there are 2.72 million households with more than two people living in privately-rented housing, which means the number of housing units for families is short 0.91 million units^{Note2} (Graphic 144).

Graphic 142 Housing Stock for Single Person Households of Young People (Under 40 years old)



(Note) Square footage is the value (average value) calculated by multiplying the middle square footage of total square footage of each footage division by the number of housing units, and dividing that by total square footage by the total number of housing units. (30-49m² is 40m², 50-69m² is 60m², 70-99m² is 85m², 100-149m² is 125m², but under 29m² is calculated as 29m², and over 150m² as 150m²)

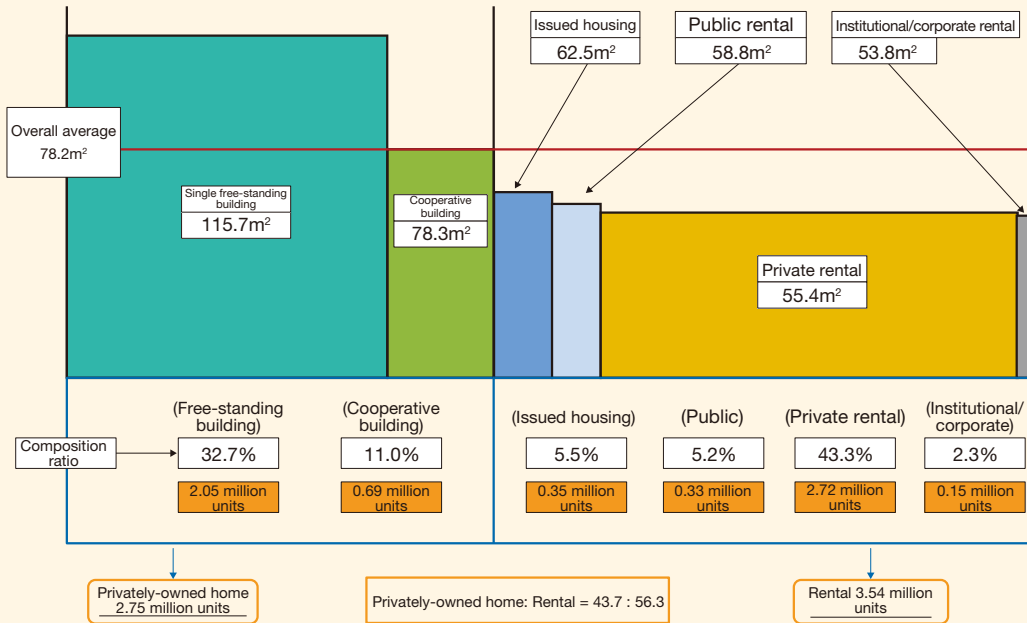
Source) Developed by MLIT from: MIC "2008 Housing and Land Survey"

Note1 Targeted housing standards is the level of square footage in a residence thought to be necessary for a comfortable residence that supports a lifestyle in a variety of ways. Targeted housing standards for General Residence is the square footage level estimated for single free-standing residences in the suburbs and areas outside the city, and targeted housing standards for Urban Residence is the level estimated for cooperative residences that are in or near the city center. Please see references for more details.

Note2 Targeted housing standards for Urban Residence is 55m² for housing for two people, but because the MIC "Housing and Land Survey" does not have a category for 55m², for convenience, any housing with more than 50m² is categorized as a rental housing unit for families.

Graphic 143

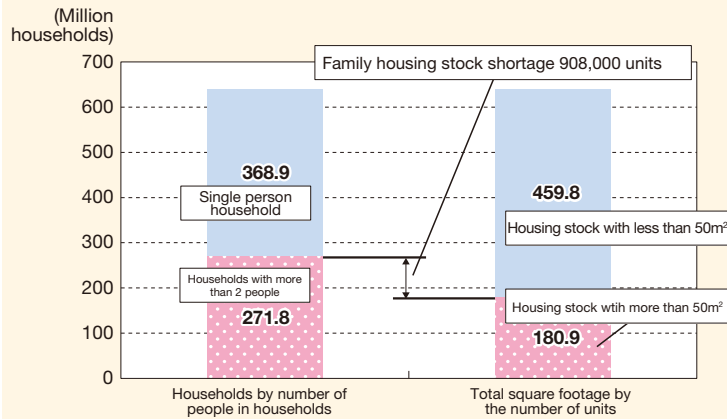
Housing Stock for Households of Young People (Head of household under 40 years old) with more than Two People



(Note) Square footage is the value (average value) calculated by multiplying the middle square footage of total square footage of each footage division by the number of housing units, and dividing that by total square footage by the total number of housing units. (30-49m² is 40m², 50-69m² is 60m², 70-99m² is 85m², 100-149m² is 125m², but under 29m² is calculated as 29m², and over 150m² as 150m²)
 Source) Developed by the MLIT from: MIC "2008 Housing and Land Survey"

Graphic 144

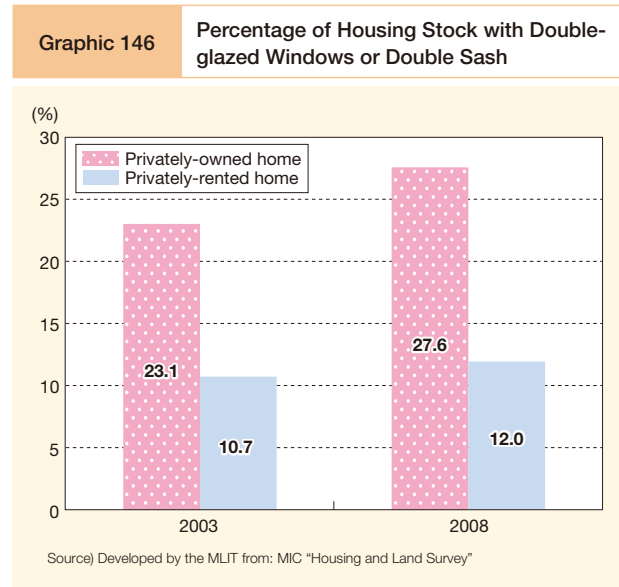
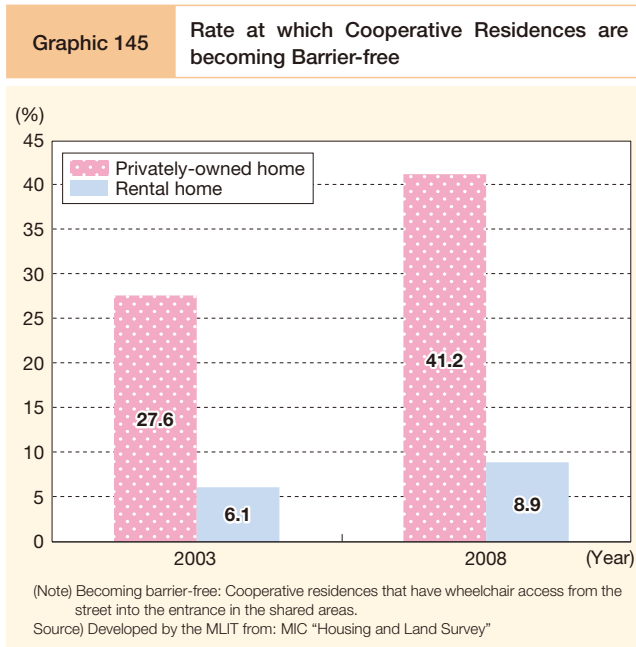
Comparison of Floor Space Area by Number of Units and Number of Households by Number of People in a Household Residing in Privately-rented Housing where Head of Household is Under 40 Years Old



(Note) Targeted housing standards for Urban Residence is 55m² for housing for two people
 Source) Developed by the MLIT from: "2008 Housing and Land Survey"

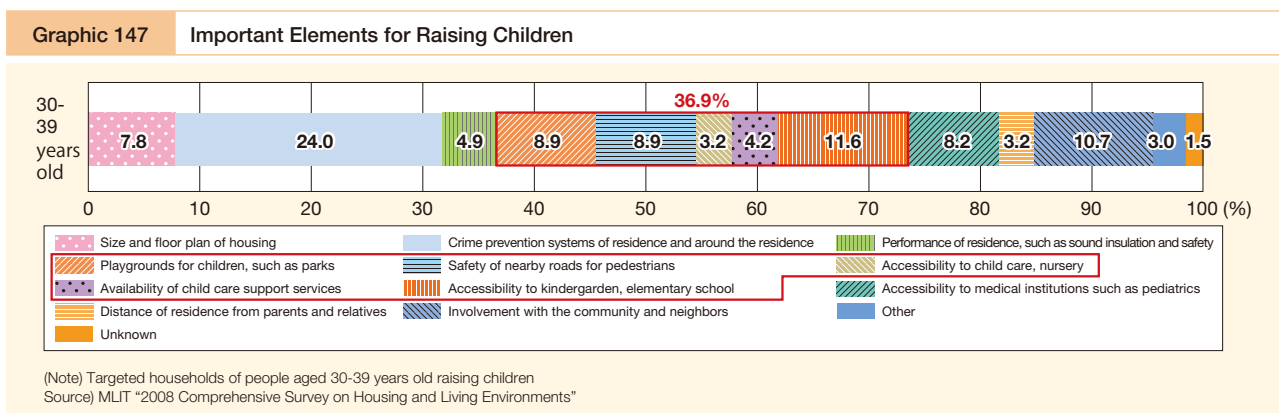
③ Barrier-free Capability, Energy-saving Performance

Rates that indicate how cooperative residential buildings are becoming barrier-free show that the percentage of cooperative residences that have a special ramps for things like baby strollers in shared spaces—such as the entrance—is at 41.2% for privately-owned homes and 8.9% for rental housing (Graphic 145). In terms of energy-saving performance, the percentage of privately-owned homes with double-glazed windows or double sash is 27.6%; for rental housing the percentage is 12.0% (Graphic 146).



(Creating an Optimal Environment for Raising Children)

The residence itself is not the only thing that enriches everyday life. The environment around the residence must also be well-developed. When a survey asked what the important elements are for raising children, 36.9% listed the following: “Playgrounds for children, such as parks”, “Safety of nearby roads for pedestrians”, “Accessibility to kindergarten, elementary school”, “Availability of child care support services”, “Accessibility to child care, nursery”. This shows that people are looking for residences that have facilities that support the raising of children in the surrounding area^{Note} (Graphic 147).



Note Regarding the number of wait-listed children for getting in to a nursery, the number was starting to increase from 17,926 children in 2007, but in 2011, the number saw the first declining trend in four years. In 2012, the number had continued decreasing since the previous year, and became 24,825 children. As one of the measures to solve this issue, the nurseries have been working to increase their capacity, and in 2012 the capacity reached 2.24 million children, which shows a consistent increase from 2.03 million children capacity in 2004.

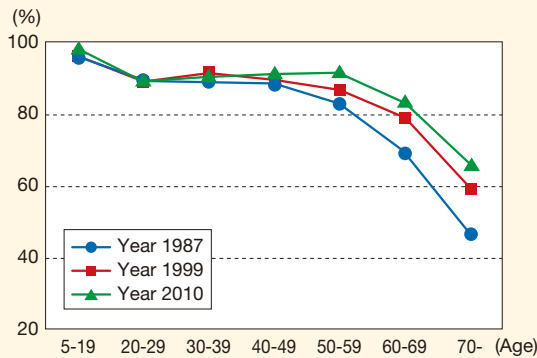
Section 3 Changes in People's Activities

(1) Trend in Outings

(The Steady Rate of Outings)

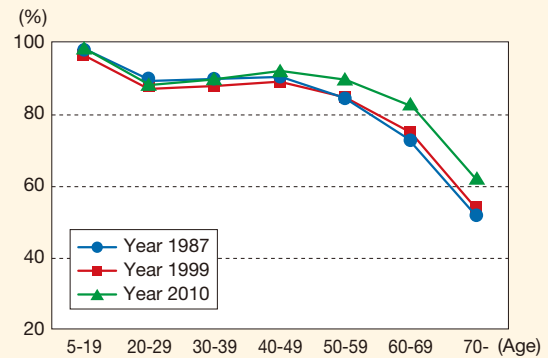
The “Nationwide Person Trip Survey”^{Note} tracks the outings rate (percentage of the residential population who go out) from 1987 to 2010 by age groups. On a weekday, in the three major metropolitan areas and in provincial city areas, the outings rate for age groups of people older than 40's increase the older they get, while the outings rate of the younger generations have stayed fairly level (Graphic 148, 149). On holidays, in the three major metropolitan areas the trend is similar to weekdays, with outings rate getting higher as the age group gets older, and staying level for younger generations (Graphic 150). In the provincial city areas, the outings rate on holidays from 1987 to 1999 declined for all ages, including the younger generations, but from 1999 to 2010 the rate appeared to be recovering (Graphic 151).

Graphic 148 Outings Rates in the Three Major Metropolitan Areas (Weekday)



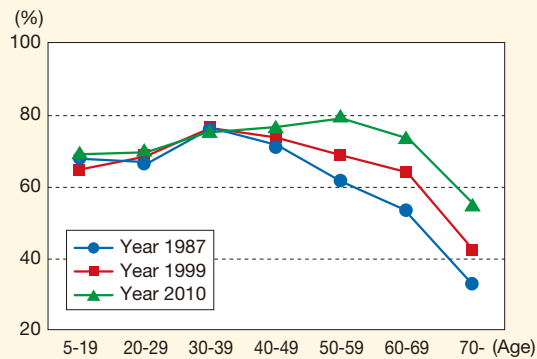
Source) MLIT "Nationwide Person Trip Survey"

Graphic 149 Outings Rates in Provincial City Areas (Weekday)



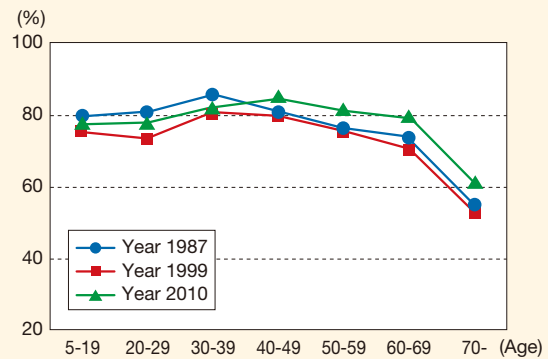
Source) MLIT "Nationwide Person Trip Survey"

Graphic 150 Outings Rates in the Three Major Metropolitan Areas (Holiday)



Source) MLIT "Nationwide Person Trip Survey"

Graphic 151 Outings Rates in Provincial City Areas (Holiday)



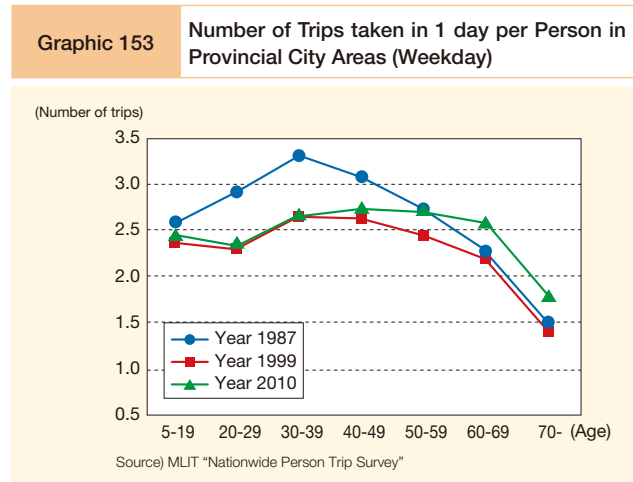
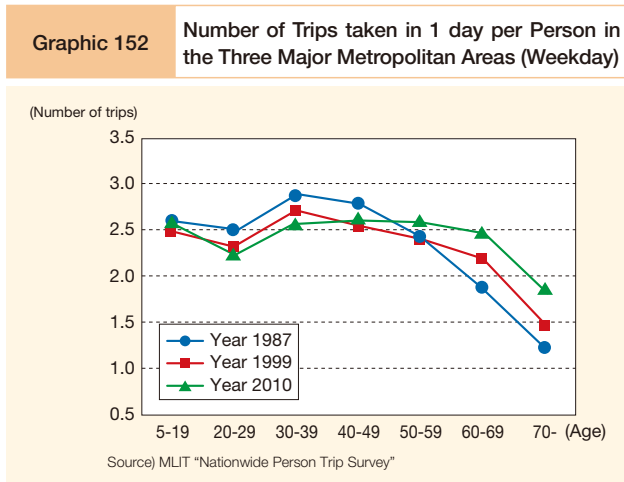
Source) MLIT "Nationwide Person Trip Survey"

(Number of trips taken have declined in three major metropolitan areas, but remain level in provincial city areas)

Next, we will look at the number of trips (when a person goes from one place to another for some specified reason or goal) taken in 1 day per person. For weekdays in the three major metropolitan areas, the number of trips taken by the younger generations has been decreasing from 1987 to 2010. However, considering the fact that the outings rate has not changed in spite of the declining number of trips, it may be that the number of errands or goals taken care of in one outing

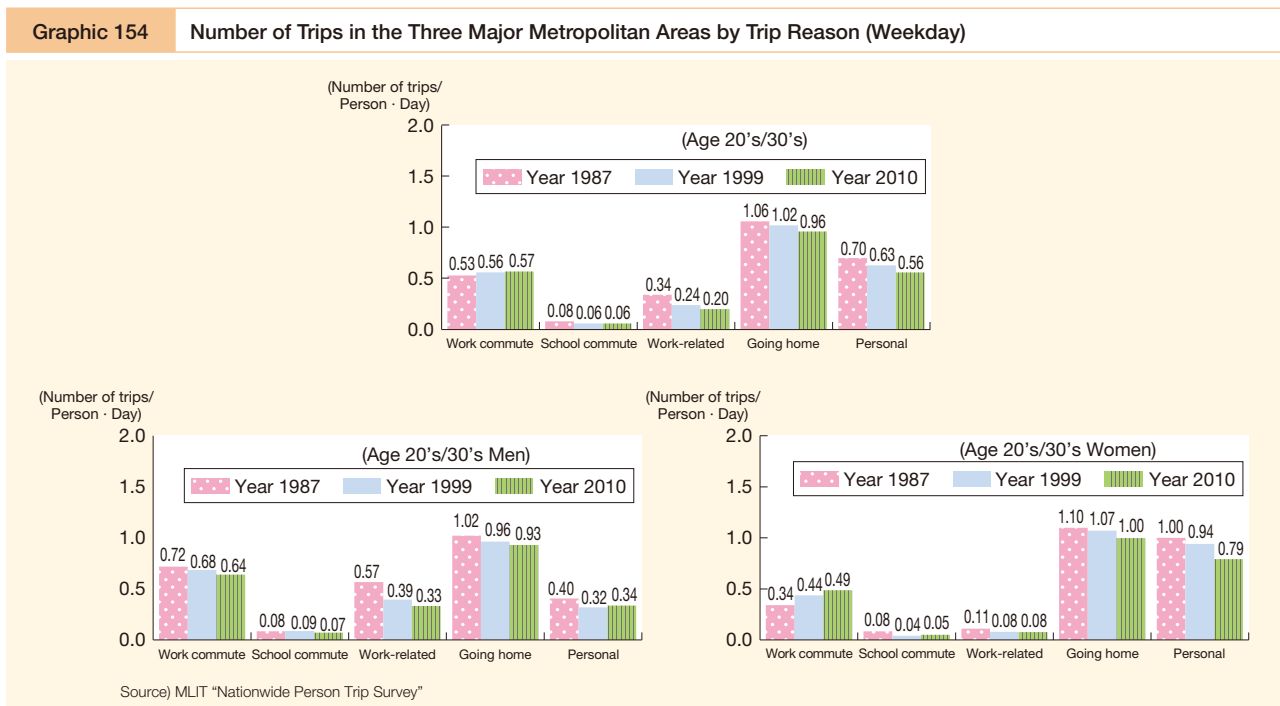
Note The three major metropolitan areas from this survey refers to “Tokyo Area, Nagoya Area, and Osaka Area,” while provincial city areas refers to “Cities other than those in one of the three major metropolitan areas”.

has decreased. For weekdays in the provincial city areas, both the outings rate and the number of trips have remained level for the younger generation from 1999 to 2010 (Graphic 152, 153).

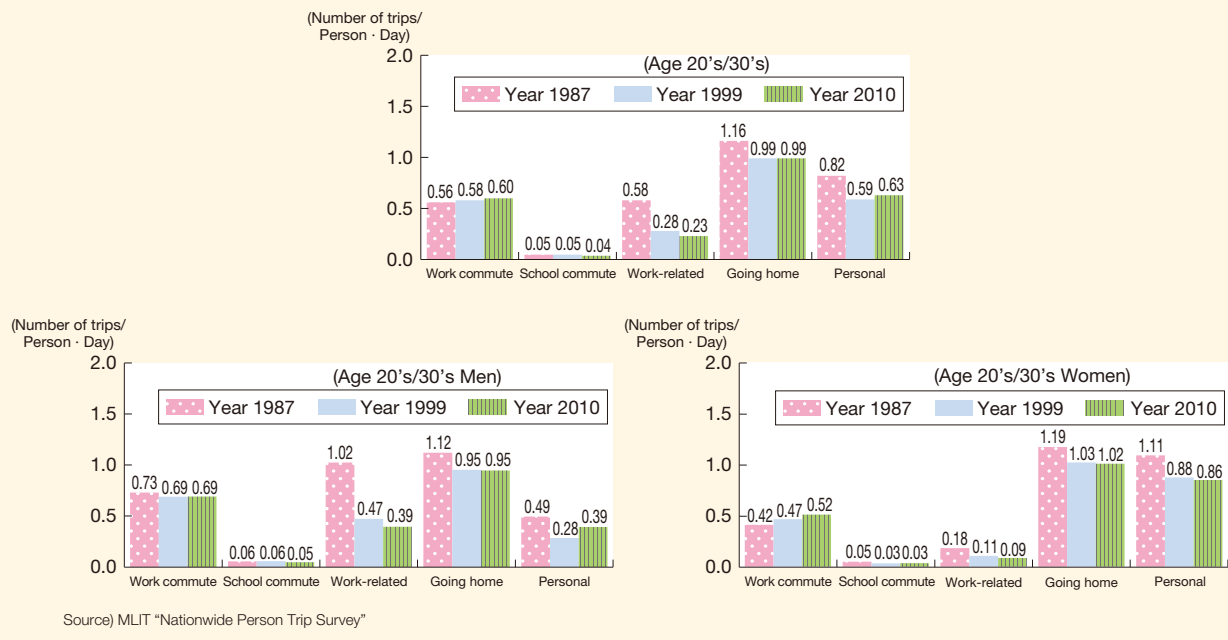


If we look at the number of trips taken by young people on a weekday in the three major metropolitan areas, the trip number for commuting reasons is rising for women, while the number of trips for personal reasons have dropped significantly, showing that the social advancement of women has led to a shift from personal trips to commuting trips, and that other trips that were for multiple reasons and combined with personal errands has also decreased. For men, the number of personal trips decreased significantly from 1987 to 1999, but from 1999 to 2010 the numbers have been recovering (Graphic 154).

The changes in the number of trips taken by young people on a weekday in the provincial city areas show a similar pattern. The women's number of trips for commuting has been increasing while personal trip numbers have been decreasing, and the number of personal trips have been increasing for men. In the provincial city areas, the growth in the number of personal trips for men is more significant than the drop in the number of personal trips for women, which means that the total number of personal trips for both men and women has increased. In this way, the weekday pattern of women's number of commuting trips increasing and personal trips decreasing, and the men's number of personal trips recovering, can be seen in both the three major metropolitan and provincial city areas (Graphic 155).

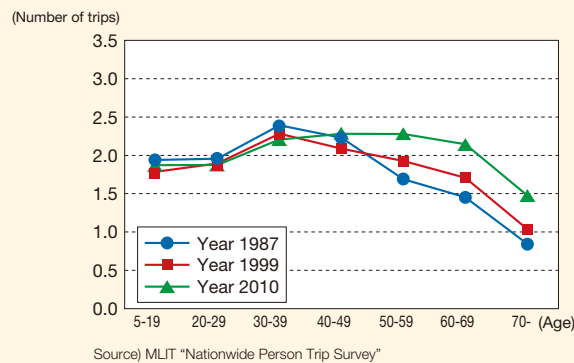


Graphic 155 Number of Trips in the Provincial City Areas by Trip Reason (Weekday)

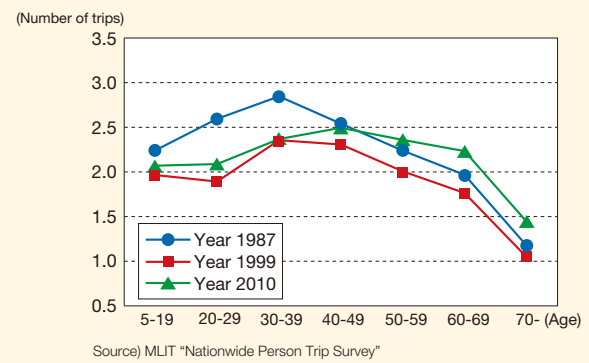


Similar to weekdays, the number of trips taken by young people in the three major metropolitan areas on holidays has been declining from 1987 to 2010. The outings rate has not changed, though the number of trips has decreased, which may be due to the fact that the number of errands or goals taken care of in one outing has decreased (Graphic 156). The number of trips taken by young people in the provincial city areas on holidays has declined from 1987 to 1999, as has the outings rate, but from 1999 to 2010 the numbers appear to be recovering (Graphic 157).

Graphic 156 Number of Trips in 1 Day per Person in the Three Major Metropolitan Areas (Holiday)

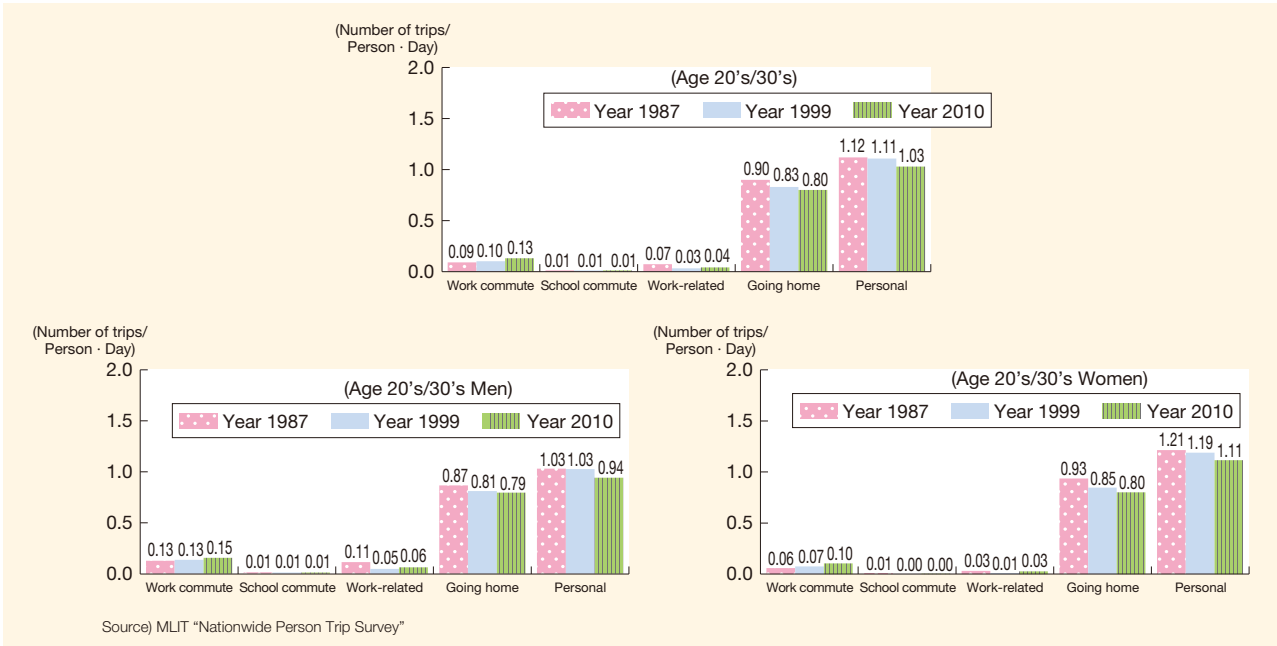


Graphic 157 Number of Trips in 1 Day per Person in the Provincial City Areas (Holiday)

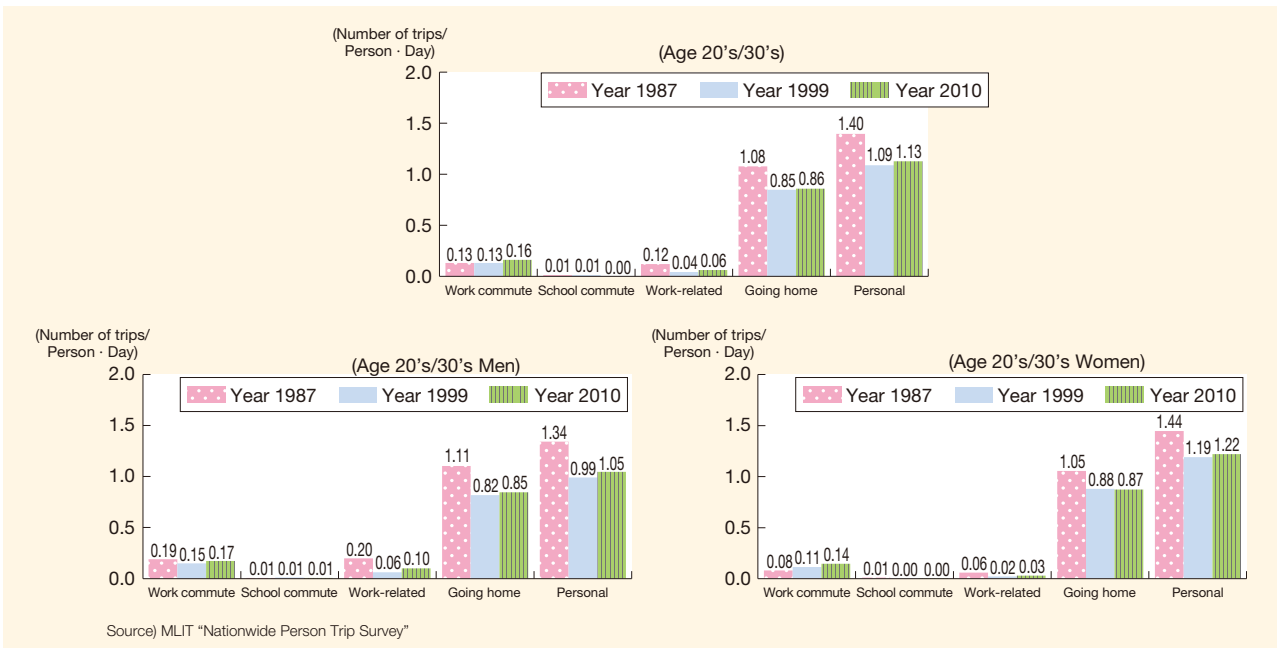


The decrease in the number of trips taken by young people in the three major metropolitan areas on holidays can be attributed to the decrease in the number of personal trips for both men and women. In contrast, the recovering numbers for trips taken by young people in provincial city areas on holidays can be attributed to the increase in personal trip numbers for men and women. From this we can see that there is a difference in trend for going on outings between young people in the three major metropolitan areas and the young people in provincial city areas (Graphic 158, 159).

Graphic 158 Number of Trips in the Three Major Metropolitan Areas by Trip Reason (Holiday)

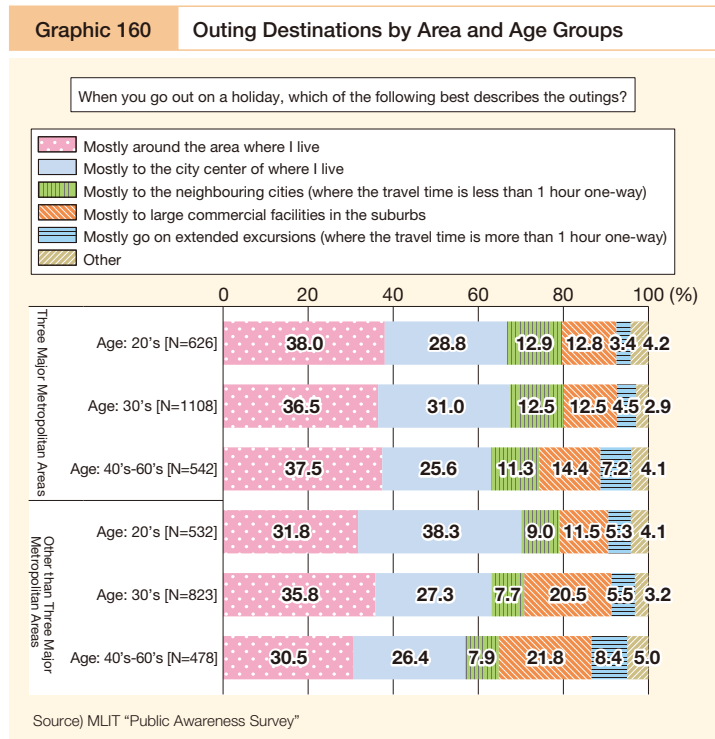


Graphic 159 Number of Trips in the Provincial City Areas by Trip Reason (Holiday)



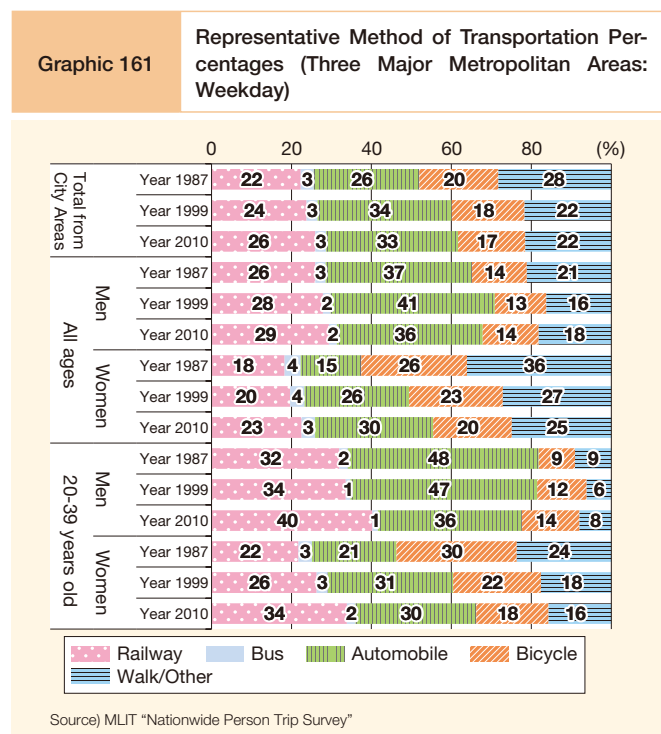
These changes in outings rate and numbers of trips taken seem indicative of the change in the range of travel when going out. As mentioned previously, it seems that the lack of change in outings rate combined with the decrease in numbers of trips is due to the decrease in the number of errands or goals taken care of in a single outing, but this may also be due to the decrease in the range of travel.

Related to this, when asked regarding holiday outings, people in their 20's and 30's had relatively higher percentages of people who preferred to go out to city centers near where they lived, and places where the travel time took less than an hour one-way, while other age groups had higher percentages of people going out to areas that were in the mid- to long-distance range, such as large commercial facilities in the suburbs, or other places where travel time took longer than one hour one-way. This trend is more marked in provincial city areas than in the three major metropolitan areas (Graphic 160).

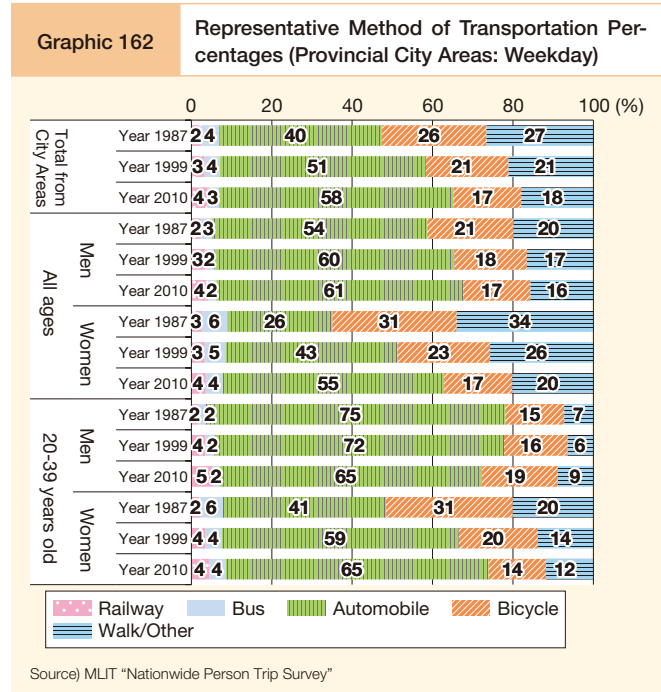


(A Shift to Using Railways instead of Automobiles in the Three Major Metropolitan Areas)

When we compare the percentages of the representative method of transportation in the three major metropolitan areas at three points in time, in 1987, 1999, and 2010, in every age group for both men and women, from 1987 to 1999 the automobile percentage was rising, but from 1999 to 2010, the automobile percentages declined for men, while it rose for women, showing a differing trend between men and women. For the 20-29 years old age group, the men's automobile percentage shows a consistent decline from 1987 to 2010, while the women show a rise in automobile percentage from 1987 to 1999, which started to decline from 1999 to 2010, but not to the degree of the men's automobile percentage; another difference in the trends between the men and women. The shift away from the use of automobiles and the convenience of railway system is thought to have set the stage for the growing use of railways, and in all age groups, including young people, the railway percentage is rising for both men and women (Graphic 161).



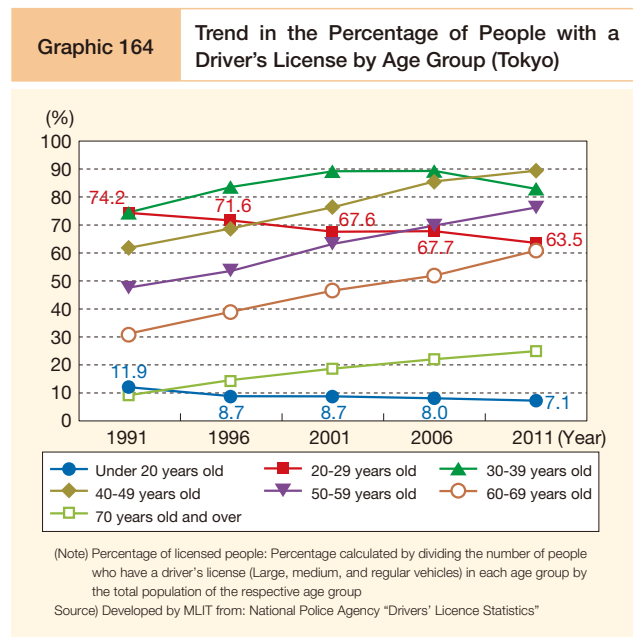
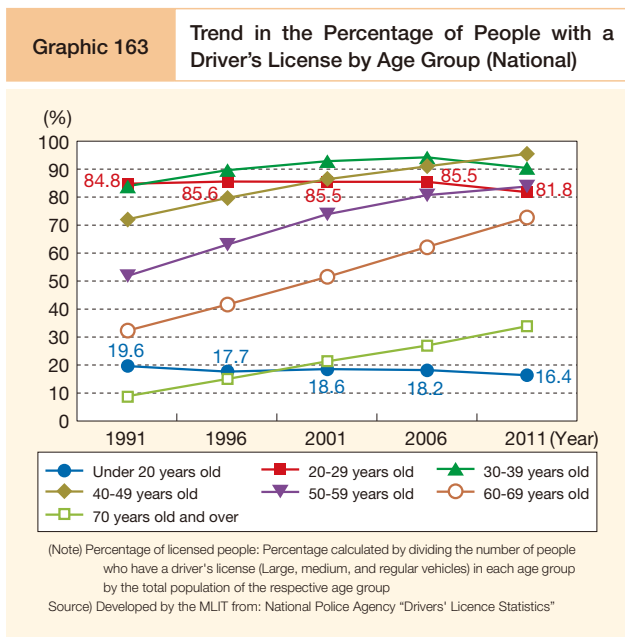
In the provincial city areas, all age groups, including the young people, the automobile percentage is rising more than in the three major metropolitan areas. The difference in trend between men and women regarding the use of automobiles is apparent in the provincial areas as well; with the automobile percentage for men showing a slight increase overall—though there is a decline with the young people—while the automobile percentage for women has been rising for women both overall and with young people. For the percentages of public transportation systems, such as railway and bus, there have been no major apparent changes in any age group, including young people, for either men or women. The changes in the automobile percentages are instead due to being offset by “Bicycle” and “Walking/other” modes of transportation (Graphic 162).



(2) Trend in Automobile Use (Percentage of Licensed People at Higher Levels than Before)

In contrast to the rise in the overall number of people who have a driving license, the number of young people who have a driver's license has been declining. This trend is especially apparent in Tokyo, where in 1991 the percentage of people in their 20's with a license was at 74.2%, then dropped to 63.5% by 2011. However, from the fact that in 2011, over 80% of people in their 20's and over 90% of people in their 30's have a license nationwide, we can see that the number of young people who have a driver's license is overall at higher levels than previously.

Though the number of people in their teens and 20's with a license is decreasing, since the those in other age groups show an increase, there is a possibility that the age at which people get their license is becoming older than before. Therefore, we cannot conclude that the number of people who want to get a license is decreasing (Graphic 163, 164).

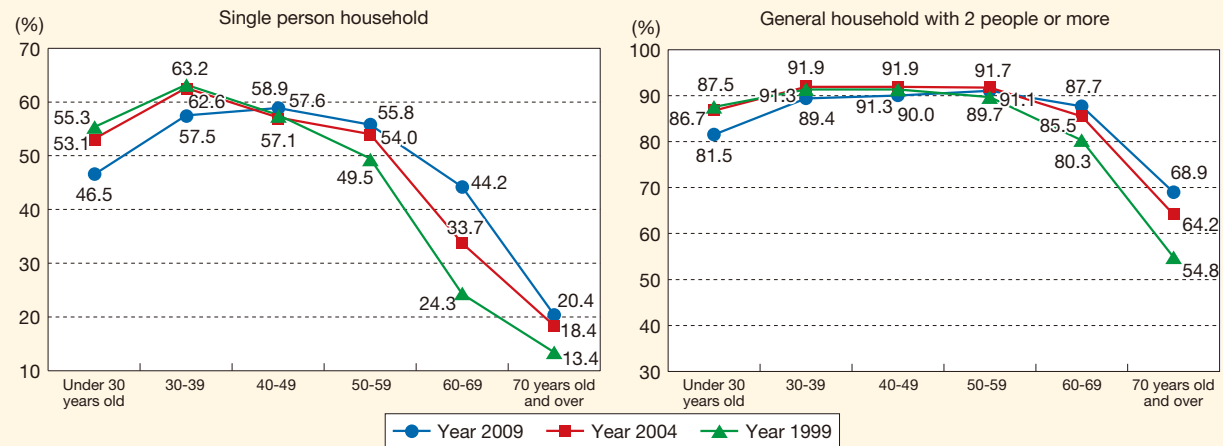


(Trend in Car Ownership Ratio Differs by Attributes)

If we look at the car ownership ratio by household type, we can see that in households of a single person, in the period

of ten years from 1999 to 2009, for those under 30 years old, the ratio has dropped 8.8%, from 55.3% to 46.5%. For those in their 30's there was a 5.7% drop, from 63.2% to 57.5%. In comparison, for households with two people or more, for those under 30 years old, the ratio dropped 6.0%, from 87.5% to 81.5%, and only dropped 1.9% for people in their 30's, from 91.3% to 89.4%. We can see from this that the degree of decline is bigger in the single person households than the households with two people or more (Graphic 165). We have hypothesized that this is due to the fact that in households with two people or more —particularly in households of couples with children—there are more occasions of travelling to a single destination with several people at once, when it makes more sense cost and convenience-wise to use one's own automobile than to use public transportation.

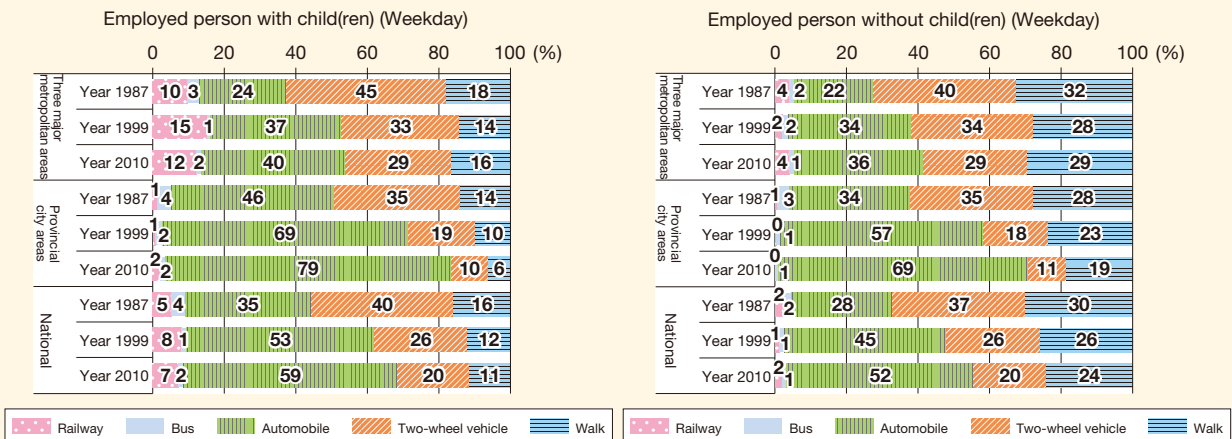
Graphic 165 Car Ownership Ratio by Household Type



Source) Developed by the MLIT from: MIC "National Survey of Family Income and Expenditure"

If we look at the transportation method percentages of women by whether or not they have children, according to the "National Survey of Family Income and Expenditure," for women who are employed and have children, their weekdays transportation method have much higher percentages of using their own vehicle than those without children. This is true of women in both the three major metropolitan areas and the provincial city areas. Furthermore, the same trend is seen in those who are not employed (Graphic 166).

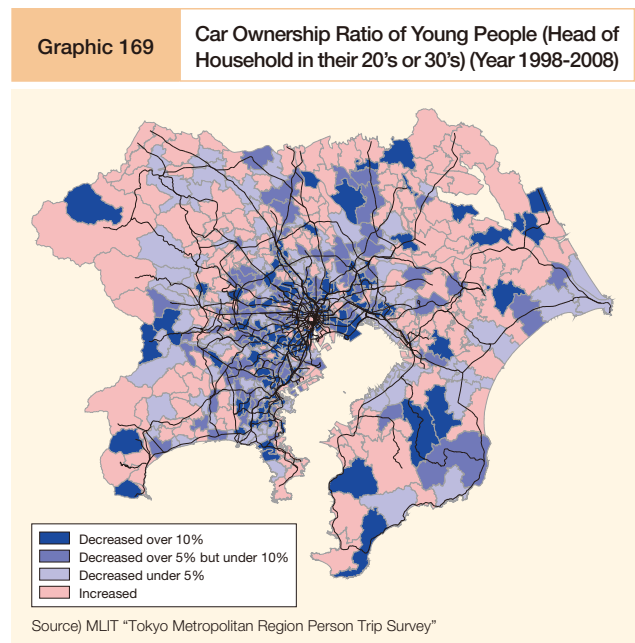
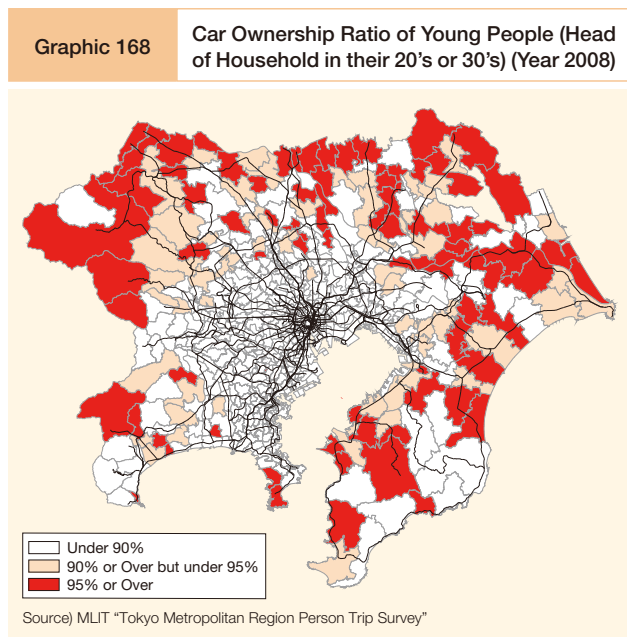
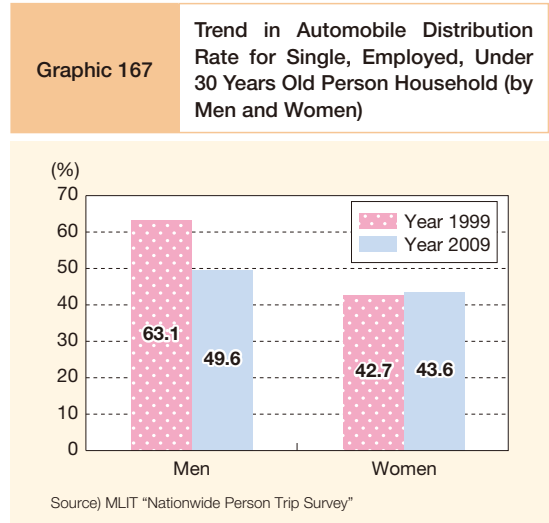
Graphic 166 Transportation Method Percentages of Women by Whether or Not they have Children



(Note) Total of women aged 20-39 years old, with or without child(ren) under 12 years old.
Source) MLIT "Nationwide Person Trip Survey"

If we look at the automobile distribution rate of young people (under 30 years old) by men and women, from 1999 to 2009, the rate has dropped 13.5%, from 63.1% to 49.6%, in men, while the rate has increased 0.9%, from 42.7% to 43.6%, in women (Graphic 167). As a result of the increase in the number of women who are employed, the number of occasions to go on outings with a car and range of travel has expanded for women, which may be the reason for this discrepancy in trends between men and women.

We mentioned earlier in this section that the percentage of people who have a driver's license is decreasing at a faster pace in Tokyo than the national percentage, but in terms of the car ownership ratio, the ratios differ within the Tokyo area, by whether they reside near the city center in the urban areas, or further out in the suburb area. Generally, in the urban areas, the railway and bus lines are well-developed, which means people living in those areas do not need to depend on having a car to travel. In addition, even if a person were to have their own car in the city, it is very difficult to find a parking space, which is another reason people are less likely to have a car. However, the further away a person lives from the city center, the higher the car ownership ratio becomes, even in Tokyo (Graphic 168). Also, if we look the change over time of car ownership ratios of the Tokyo area by region, from 1998 to 2008, the car ownership ratios have been in decline near the city center, but rising in the suburban areas (Graphic 169).



(Young People “Growing Away from Cars”)

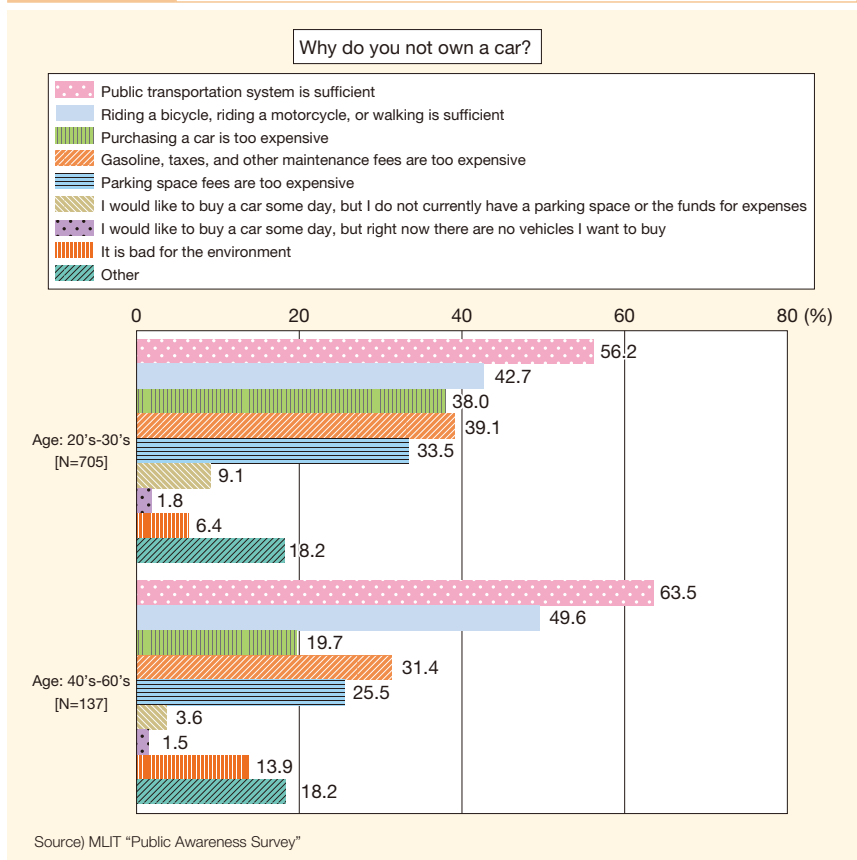
As apparent above, both the number of young people with driver’s license and the car ownership ratio of young people are declining, but the fact that the number of young people with licenses is not decreasing as much as car ownership ratio shows that the desire to “own” a car and the desire to “use” a car may be treated differently. Therefore, while the need to own a car for daily transportation use decreases and the financial ramifications of owning a car leads to a lessening in the desire to own one, the fact that people are still getting licensed in case they have an occasion to drive in the future, such as getting a rental car to go on a trip or for other short-term needs, it seems the desire to use a car still continues to exist.

In terms of the young people’s desire to own a car, there are those who think, “I would like to own a car someday,” but, due to present financial constraints, must delay the purchase, which may contribute to the falling car ownership ratios. However, considering the fact that out of those who do not currently own a car, the percentage of people in their 20’s and 30’s who think, “I would eventually like to buy a car, but at the moment do not have the funds or a parking place” is rising, and the fact that the car ownership ratios rise in single person households of people in their 40’s and older, and in two or more people households of people in their 60’s and older, there seems to be a very probable possibility that the current generation of young people may end up purchasing a car later in life (Graphic 170).

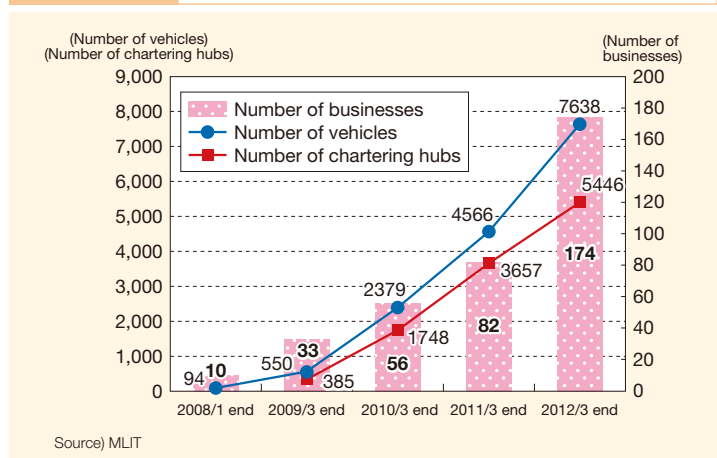
For those who do not own a car, previously, when they had need of an automobile they would get a rental car. Recently, however, with the development of the car sharing system, the numbers of rental type car sharing businesses, numbers of cars, and numbers of vehicle chartering hubs are all growing yearly (Graphic 171). According to results from a survey conducted by Times 24 Co., Ltd., for future car purchase intentions, those who said, “I was already planning to purchase a car eventually” was at 32.7%, and we can also see that until they purchased their own vehicle, many people use the car sharing system as an alternative.

When we look at the car purchasing intentions before and after using the car sharing system, the percentage of people who reply, “I do want to purchase a car” after using car sharing has grown, so it may be that as people have more opportunity to use a car, it is more likely that they will be more motivated to purchase a car later (Graphic 172). As evident from this spreading development of car sharing, this thinking that if it is possible to use the

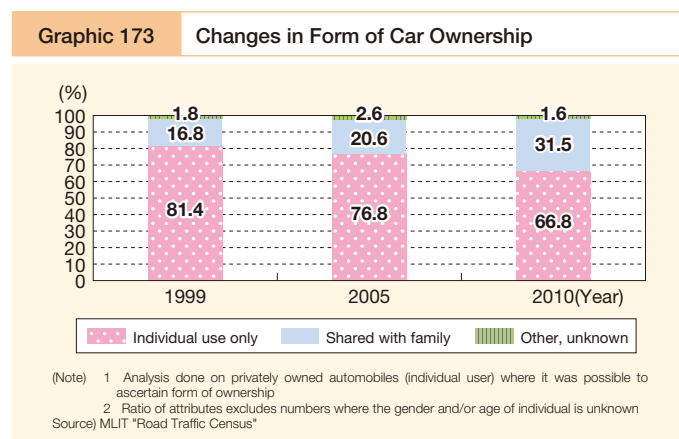
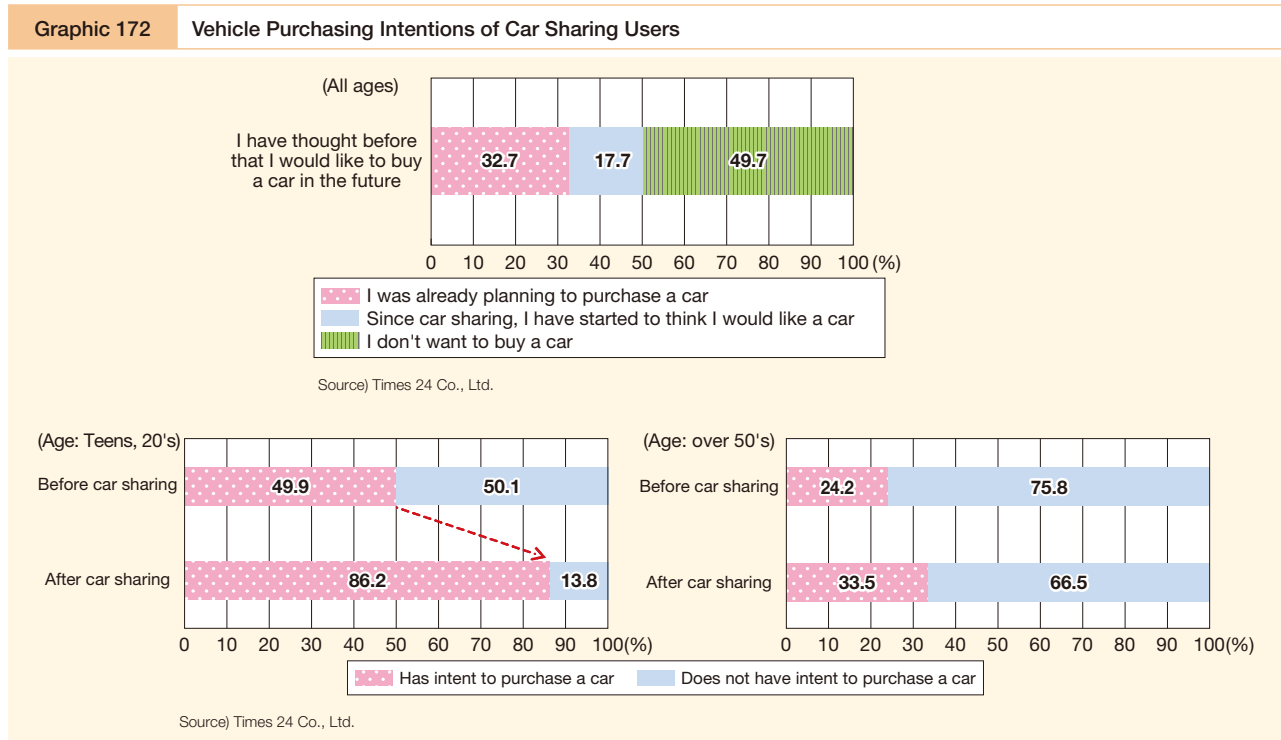
Graphic 170 Reasons for Not Owning a Car



Graphic 171 Number of Rental Type Car Sharing Businesses, Number of Vehicles, and Number of Chartering Hubs



car when they want to or need to, regardless of whether or not the car is their own, then that is sufficient, is growing. This is also apparent in the change in car ownership ratios. The car ownership ratio of private automobiles is shifting from personally owned vehicles to sharing a vehicle with family members. The personally owned private automobile percentage has dropped from 81.4% in 1999 to 66.8% in 2010 (Graphic 173).



(3) Trend in Bicycle Usage (Growing Number of Bicyclists)

The percentages of people who regularly ride a bicycle to commute to school or work was at 15.5% of people in their 20's and 10.7% of people in their 30's in 1999, but in 2009, the percentages were 15.9% and 12.9% respectively, showing a growth in percentages of bicyclists for both age groups (Graphic 174). Considering the fact that in the overall average, inclusive of all age groups, the percentage of bicyclists has declined from 1999 to 2009, it seems that the number of young people who are riding bicycles must be especially high.

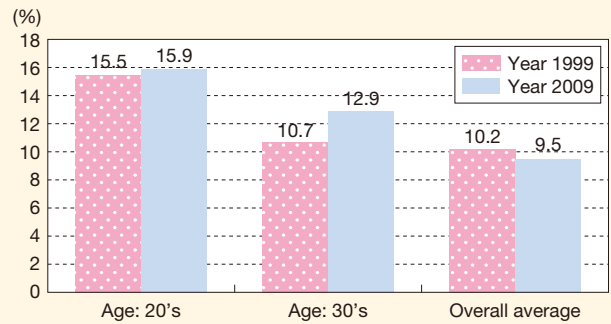
To accommodate this growth, in big city areas they are developing cyclist station facilities with shower rooms, lockers, bicycle racks, and other services to cater to bicycle commuters.

There are also developments in other regional areas, such as setting up "Community Cycling", as a new method of

transportation within the region. Community Cycling differs from the rental cycling where the cycle ports are at railway stations and is mainly for making roundtrips to and from a specific destination. Instead, Community Cycling has several ports within the region, which makes areal travel possible, to improve the convenience of daily transportation. There are great expectations that Community Cycling will help solve some of the challenges in town planning.

The tourist industry is also working to utilize this cycling trend to stimulate their business, by drumming up new demand from cyclists. More specifically, they are incorporate cycling in to tours by creating a new type of tour, the “Cycling Bus Tour”, where the tourist bring their own bicycles and load them on to a bus or train, then take them out at the destination to enjoy cycling tours around the destination area.

Graphic 174 Percentages of People who Cycle to Commute to Work or School



(Note) Extracted the bicycle users from the survey with multiple choice answers regarding regularly used method of transportation
 Source) Developed by MLIT from: Cabinet Office “Public Survey on Planning a Walkable Town” (2009) and “Public Survey on Urban Transport”

Featured Article

Town Planning through Cycle Share
 ~Cycling for Everyone in Sapporo 'Porocle'~

In the Sapporo city area, as a new form of public transportation, the use of a bicycle share system called, “Porocle” has been developing. To use the Porocle service, a person must first register on the Porocle website. Then the user can go to a “Cycle Port”, an automated rental hub where the user can identify themselves with an IC card or a mobile phone, and freely take out or put back a bicycle.

Cycle ports throughout the city



Source) Docon Mobility Design Co.,Ltd.

Cycle port



Renting a bicycle



Currently, Porocle has 45 cycle ports throughout an area in the Sapporo city that is approximately 5km wide east to west and 3km north to south. Approximately 270 bicycles are available for use, and the number of registered users has reached over 6,500 people (Total from end of 2012 business year). According to the 2012 Porocle user survey, 75% of the young people who use the service answered that their range of travel has been expanded, thanks to the Porocle service. We can see that the use of Porocle has allowed the travel range and activities of the young people in the Sapporo city to expand.

The reason Porocle was instituted was because of the problem in the Sapporo city area of the city's reputation deteriorating due to people leaving bicycles on sidewalks, and poor road manners of cyclists. As one of the ways to solve this problem, in 2008 the university-industry research group began the development of the Cycle Sharing Service, and in 2011, Docon Mobility Design Co., Ltd. launched the operation.

The special characteristic of Porocle, among all the nation-wide bicycle sharing developments progressing, is that the young people are actively involved as part of the management body, and that they are trying to work in cooperation with various entities, such as the Sapporo Odori City Development Co.,Ltd., that are involved in community development.

Porocle's operations are run mainly by a group of young people around 20 years old, under the NPO organization "Ezorock." This group checks the bicycles and the cycle ports, adjusts the numbers of bicycles at the various ports, and other daily management and business operations. They are also working to help people comply with rules pertaining to riding bicycles and improve roadside manners by doing PR work among the local citizens. The Sapporo Odori City Development Co., Ltd. is working on the "City Center Bicycle Measures Action Plan" developed by the shopping district community, and as a part of these measures, Porocle has been assigned with establishing a base for the alternative to privately-owned bicycles and administering educational activities regarding roadside manners.

In this way, not only is Porocle a transportation alternative, but by encouraging young people and the community to get involved, Porocle is contributing to community building from several aspects, such as creating community interaction, forming a positive urban landscape, ensuring safety and ease in pedestrian spaces, and realizing an environment-friendly transportation system.

Out on the street, encouraging people to comply with cycling rules



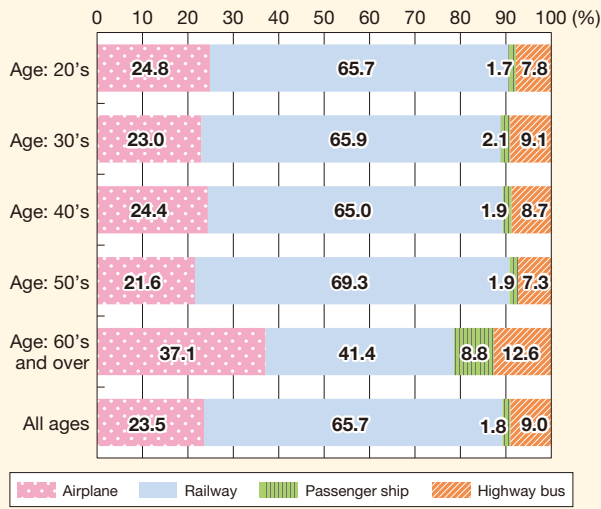
Source) Docon Mobility Design Co.,Ltd.

(4) Trend in Travelling Outside the Prefecture

Regarding travel outside the prefecture, out of the several transportation methods available, all with differences in travel time, costs, etc., which methods are the young people choosing? For holiday travel outside the prefecture (excluding travel by passenger automobiles and work-related travel), if we look at the main methods of transportation used by age groups, while the percentage of people in their 20's who travel by airplanes is lower than other generations, they have a higher percentage of people who travel by bus. If we compare the people in their 20's in 2005 and the people in their 20's in 2010, the percentage of people who travel by planes has dropped by a larger margin than other age groups, but the percentage of people who travel by bus has increased (Graphic 175, 176).

Graphic 175

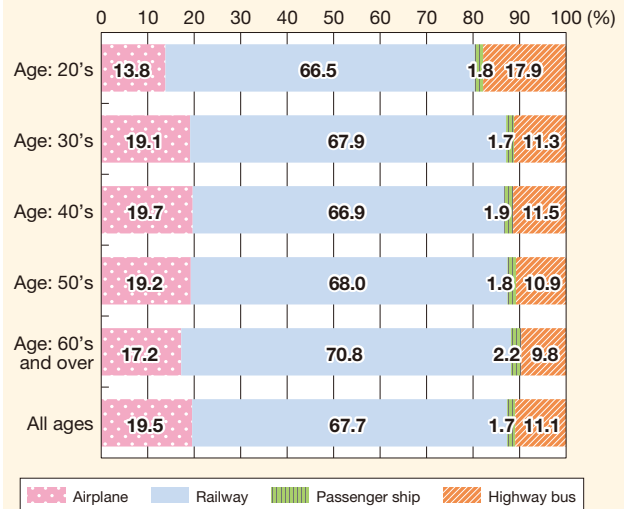
Distribution of Main Methods of Transportation (Year 2005/Holidays) (Excludes travel by passenger automobiles and work-related travel)



Source) MLIT "2010 Inter-regional Travel Survey in Japan"

Graphic 176

Distribution of Main Methods of Transportation (Year 2010/Holidays) (Excludes travel by passenger automobiles and work-related travel)



Source) MLIT "2010 Inter-regional Travel Survey in Japan"

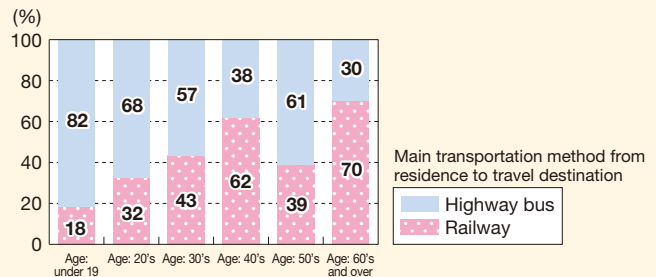
We have looked more specifically at an area where bus and railway compete, and if we look at the transportation distribution by age group, more young people choose the bus system due to the cheaper costs. For example, for travel between Miyagi and Akita, 82% of people under 19 years old, 68% of people in their 20's, and 57% of people in their 30's use the bus system. This shows that the younger the age group, the higher the percentage of people who use the bus (Graphic 177).

There have been several LCC (Low Cost Carrier) airlines entering the market in Japan, starting with Peach Aviation Co., Ltd. in the fiscal year of 2011, Jetstar Japan Co., Ltd. in July 2012, and AirAsia Japan Co., Ltd. in August 2012. The entry of such LCC airlines into the market is expected to create some new demand for air travel and a change in the transportation method distribution among young people.

Graphic 177

Transportation Distribution of Travel between Miyagi and Akita, Service Level by Method of Transportation

Transportation distribution for travel between Miyagi and Akita



Service level between Miyagi and Akita by transportation method

	Travel time (minutes)	Cost (JPY/minute)
Railway	188	10,080
Bus	257	4,200

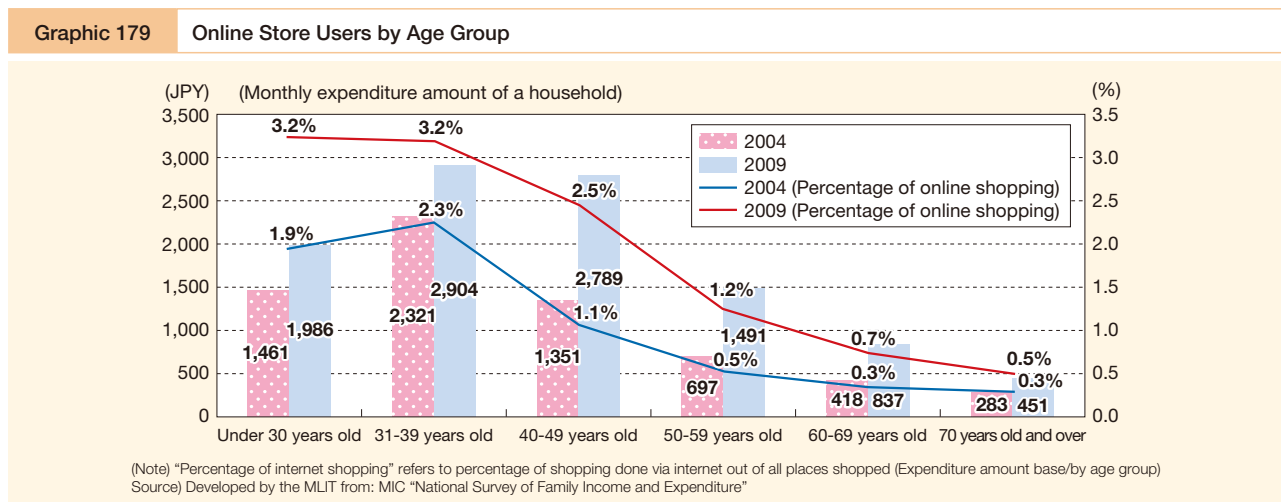
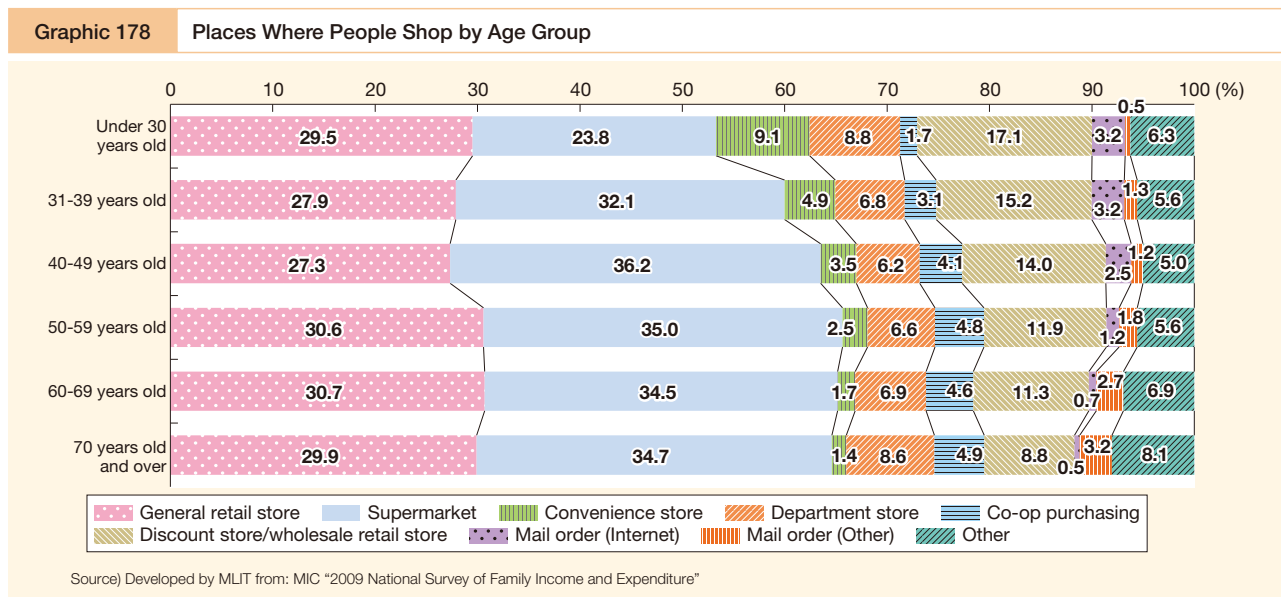
Source) MLIT "2010 Inter-regional Travel Survey in Japan"

(5) Changes in Travel Demand

As seen in the previous section, in the three major metropolitan areas the use of automobiles is continuing to decline while the use of railway lines are progressing, as travel by car is replaced by public transportation. When those who do not own a car are asked why they do not own a car, the majority reply that public transportation is sufficient for travel, while over 40% say that bicycles, motorcycles, walking, and other modes of transportation besides public transportation is sufficient for travel (Graphic 170). From this, we can infer that as public transportation systems improve, and as a growing number of people reside in central areas with high accessibility to things and services, there are more and more people whose lifestyles are not dependent on cars.

The things that are replacing car travel are not limited to other transportation methods. While "travel" can mean going for a drive or taking another method of transportation expressly for the purpose of travelling, most of the time travel is the secondary occurrence from another purpose, such as commuting to work or school, going shopping, etc. Until recently,

people had to go travel to a specific destination to acquire items or service in order to accomplish their goal. Lately though, because of the developments in information communication technology and logistics network, there are things and services people can acquire without travelling. For example, it used to be that to do some shopping, a person would have to go out to a store, speak to a salesperson and compare products at the store, then make the purchase. Now in addition to the previous method, a person can search a product on the internet, read product reviews online to compare then have the purchase delivered directly to their home. This is method of shopping is becoming more and more common. In actuality, if we look at the places where people shop by age groups, in comparison to other age groups, those under 30 years old and those in their 30's have lower percentages of shopping at general retail stores and supermarkets, while the percentages of mail order shopping via the internet continue to grow (Graphic 178, 179).



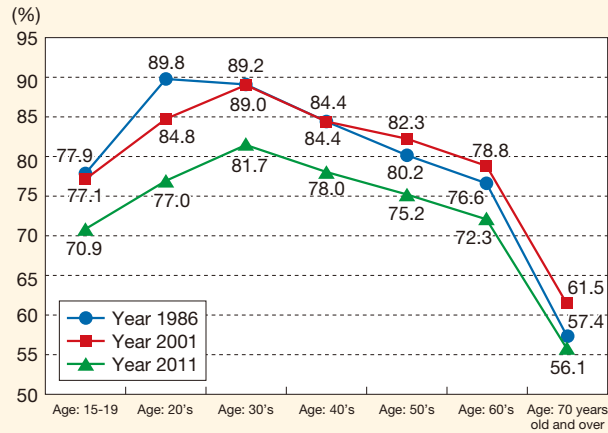
This change in travel is thought to be a major change in the way people live, in both city and provincial areas. As there are certain things and services that a person must travel to, such as getting a detailed examination at a hospital, or going to sightseeing spots, as well as the continuing demand to enjoy the actual process of travel itself, depending on type of product or service, the question will be whether to bring these services or products to people, or to bring the people to the product or service. With both possibilities continuing to be developed, as well as the demand for travel itself, the research into the best means of travel shall continue to be important.

(6) Trend in Trips

If we look at the ratio of people who go on trips both domestically and abroad requiring accommodations, or on day-trips that take more than half a day (excursions), according to “Social Life Basic Survey”, for the age groups of people older than 50’s, from 1986 to 2001 the percentages increased, but from 2001 to 2011 the percentages have declined more significantly, so the percentages levels in 2011 are lower than in 1986. Meanwhile, for people aged 15-19 years, and young people in their 20’s and 30’s, the percentages are continuing to decrease, and with a much bigger drop than in other age groups (Graphic 180).

Graphic 180

Percentages of People who went on Overnight Trips/Excursions (Day-Trips)



Source) Developed by the MLIT from: MIC "Social Life Basic Survey"

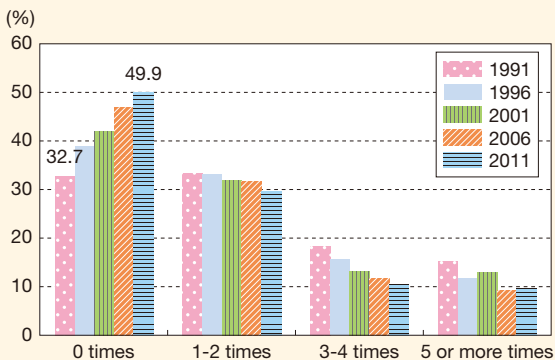
(Decrease in Domestic Overnight Sightseeing Trips and Excursions)

If we look at the number of times a young person in his or her 20’s went took a trip within Japan (overnight sightseeing trip or excursion) over the course of a year, the percentages of people who have not gone on any trips or on excursions (people who answered 0 times) are both increasing. The percentage of people who answered 0 times for going out on excursions rose from 24.0% to 37.9%, from 1991 to 2011 (+13.9%), and 0 times for going on trips rose from 32.7% to 49.9% (+17.2%) for overnight sightseeing trips, showing that there are more young people who are not going on overnight sightseeing trips.

If we look at the number of people who said that they have gone on a trip more than once, the percentage of people who have gone on an overnight sightseeing trip within Japan 1-2 times was the highest, with the number of people who have gone 3-4 times and more than 5 times decreasing as the number of trips taken increase. Meanwhile for the percentages of people who have gone out on an excursion, the highest percentage is people who have gone more than 5 times, from which we can surmise that excursions—which require less money and time than overnight trips—are becoming the most accessible type of travel for young people (Graphic 181, 182).

Graphic 181

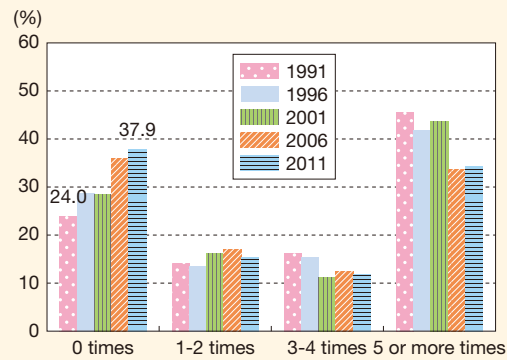
Trend in Overnight Sightseeing Trip Participation Rates by Number of Trips Taken



(Note) Participation rate of youth in their 20's (=total of number of participants in 1 year/total population)
Source) Developed by MLIT from: MIC "Social Life Basic Survey"

Graphic 182

Trend in Excursion Participation Rates by Number of Excursions Taken

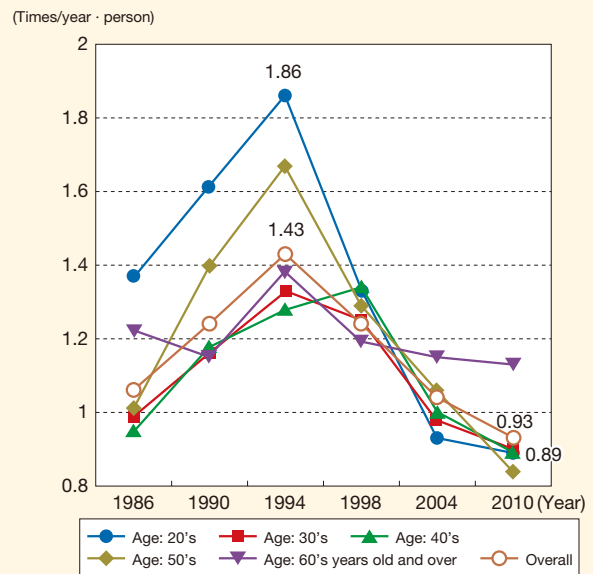


(Note) Participation rate of youth in their 20's (=total of number of participants in 1 year/total population)
Source) Developed by MLIT from: MIC "Social Life Basic Survey"

The trend of young people not going on overnight sightseeing trips in Japan is also reflected in the declining average of domestic overnight sightseeing trips. While the average over all ages from decreased from 1.43 times to 0.93 times from 1994 to 2010, the decline was even bigger in the age group of people in their 20's, decreasing from 1.86 times to 0.89 times (Graphic 183).

This steep drop in the number of domestic overnight sightseeing trips taken by young people from mid-1990's to the 2000's may be due to the decline in the number of trips taken for sports, especially ski trips, which had been very popular during the mid-1990's.

Graphic 183 Average Number of Domestic Overnight Sightseeing Trips Taken in a Year



Source) Developed by the MLIT from: Japan Travel and Tourism Association "Survey of Trend regarding Public Tourism"

(Factors Affecting the Travel Trends)

The decrease in domestic travel is thought to be due to the changes in the economic climate from around 1990 to now, changes in travel itself, and changes in travel companions.

① Change in Economic Climate

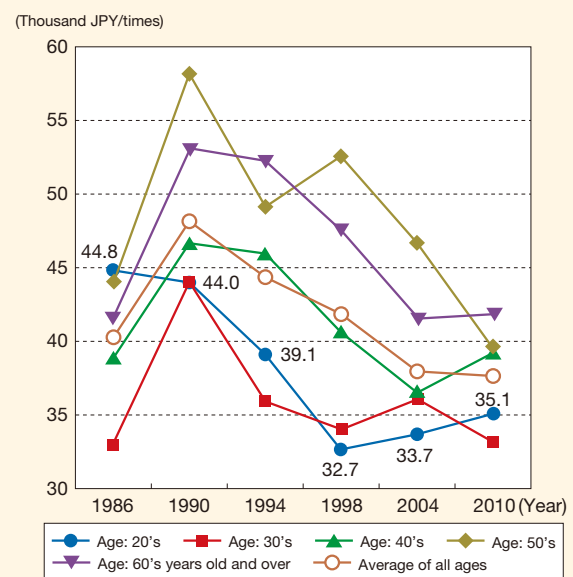
The booming economy from the economic bubble in the latter half of the 1980's to the beginning of the 1990's is thought to be one of the reason young people were taking more trips. If we look at the average cost of a single overnight trip, the most expensive prices were during the economic bubble period, and the average cost of a single trip for a person in his or her 20's was around JPY45,000 in 1986. After the economic bubble burst however, the average trip cost dropped to JPY 33,000 in 1998.

Since then, the average trip costs have been approximately JPY34,000 in 2004, and JPY35,000 in 2010, which shows that the average trip cost is recovering. However, considering the fact that the average number of overnight sightseeing trips taken has continued to decline since the economic bubble burst, combined with the decreasing trip costs, compared to the economic bubble period, there continues to be an overall trend of keeping trip expenditures low (Graphic 184).

② Change in Travel Companions

When asked what caused you to want to go on a trip within Japan, rather than answers related to internal factors, such as, "For refreshment," or "Discovered an attractive travel destination," more people answered with external factors such as, "Invited by a friend/acquaintance," etc. In particular, more women reply with, "Invited by a family member," "Invited by a lover," along with "Invited by a friend/acquaintance" compared to men (Graphic 185). When asked why they did not take a trip within Japan, especially among those who had not gone on any trips (people who have not taken a trip within a year), the answer most people replied with was, "Have no one to go with," or "No one invited me" (Graphic 186).

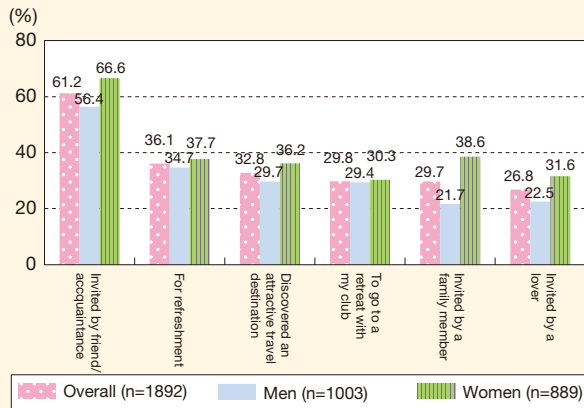
Graphic 184 Average Cost of a Single Overnight Sightseeing Trip within Japan



Source) Developed by the MLIT from: Japan Travel and Tourism Association "Survey of Trend regarding Public Tourism"

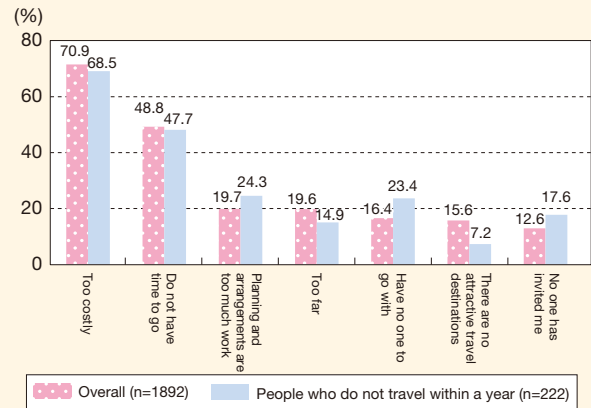
If, as above, whether or not someone invites you is one of the main motivators for going on a trip, it is understandable that during a time like the economic bubble period when young people travelled prolifically in general, that in addition to people going on trips for internal reasons, there would also be even more people who go on trips because of external reasons. On the other hand, if young people are going on less trips in general, as they are currently, even those who are motivated to take a trip for internal reasons may think, “I would like to go on a trip with someone, but if no one wants to go then I won’t go.” This then may lead to even less people actually going on a trip.

Graphic 185 Causes for Wanting to Go on a Trip within Japan



(Note) 1 Because the answers were “the most applicable” chosen from multiple choice, the total is not equivalent to 100%.
 2 The population surveyed were made up of: vocational school student (3.2%), community college student (1.6%), university student (76.1%), graduate student (19.2%).
 3 Reason for wanting to go made up 20% of the items, and reason for not going was extracted from the top 7 items.
 Source) FY2010 Japan Tourism Agency “Survey, Analysis, and Report on Young People’s Travel Inclination and Perspective”

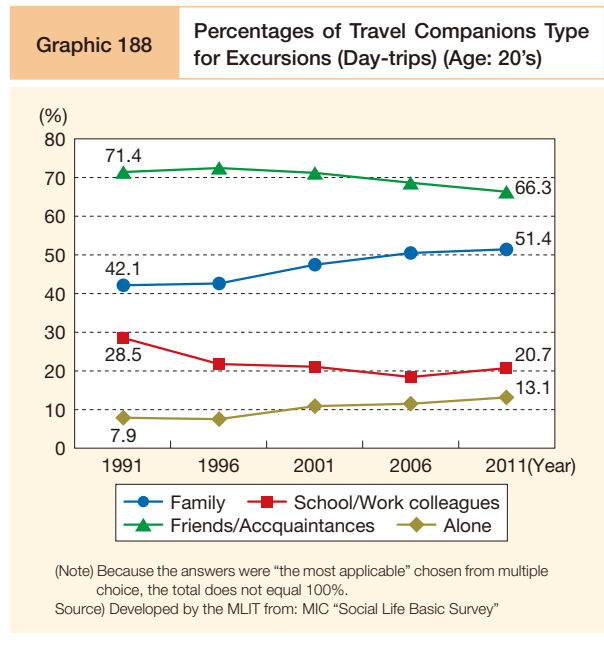
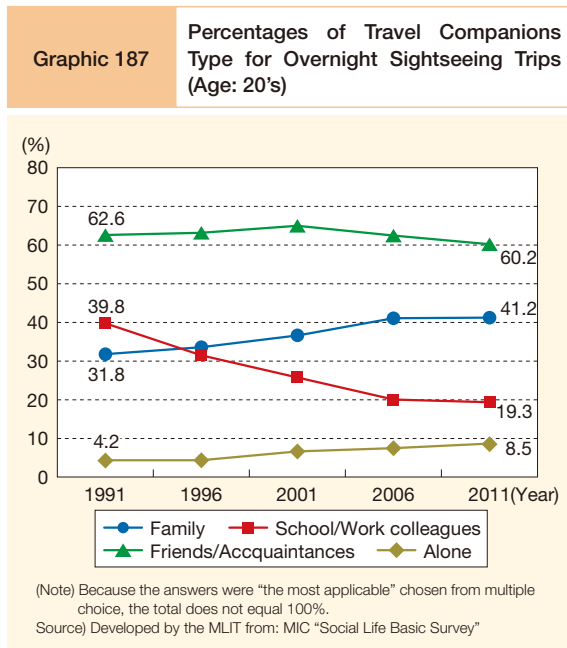
Graphic 186 Reasons for Not Going on a Trip within Japan



(Note) 1 Because the answers were “the most applicable” chosen from multiple choice, the total is not equivalent to 100%.
 2 The population surveyed were made up of: vocational school student (3.2%), community college student (1.6%), university student (76.1%), graduate student (19.2%).
 3 Reason for wanting to go made up 20% of the items, and reason for not going was extracted from the top 7 items.
 Source) FY2010 Japan Tourism Agency “Survey, Analysis, and Report on Young People’s Travel Inclination and Perspective”

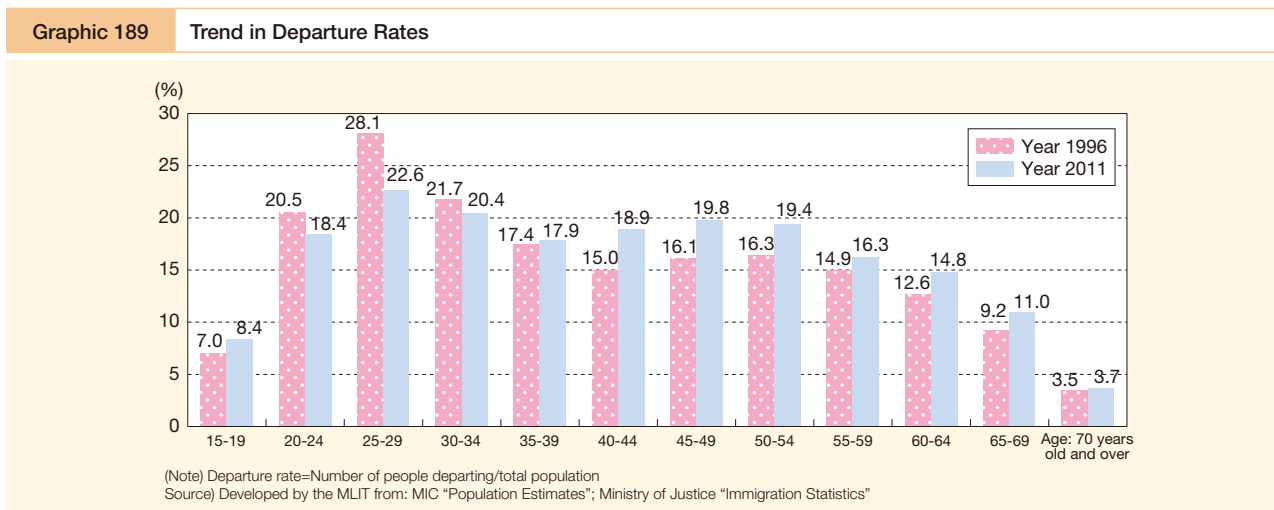
Regarding travel companions for overnight sightseeing trips and excursions, if we look at the percentages by companion type, “School/Work colleagues” and “Friends/Acquaintances” percentages are declining; the percentage of “School/Work colleagues” has especially dropped significantly. From 1991 to 2011, the percentage for overnight trips has decreased from 39.8% to 19.3%, while the percentage for excursions has dropped from 28.5% to 20.7% (Graphic 187, 188). Considering the fact that one of the main motivators for people going on an overnight trip seems to be the receiving of an invitation from someone, if trips taken with work colleagues and people in a university club—where one would go on a trip because of an invitation—are decreasing, then this may be one of the reasons the number of domestic trips taken by young people is declining.

Meanwhile, in recent years, there is a rise in the percentage of people who take overnight sightseeing trips and excursions by themselves. It seems that people who are very interested in travelling will take trips whether or not they have a travel companion. This percentage is especially growing for excursions, and this may be due to the fact that going out on excursions without a travel companion is easier. We mentioned earlier that within the decreasing trend in the number of domestic trips taken by young people, the decline is less significant in the number of excursions than in the number of overnight sightseeing trips. This smaller drop in the number of excursion trips may be due to the fact that for excursions, the decrease in number of trips taken with “School/Work colleagues” is much smaller, and also that the number of excursions people take “Alone” are relatively high.



(Polarization of Trends in International Travel)

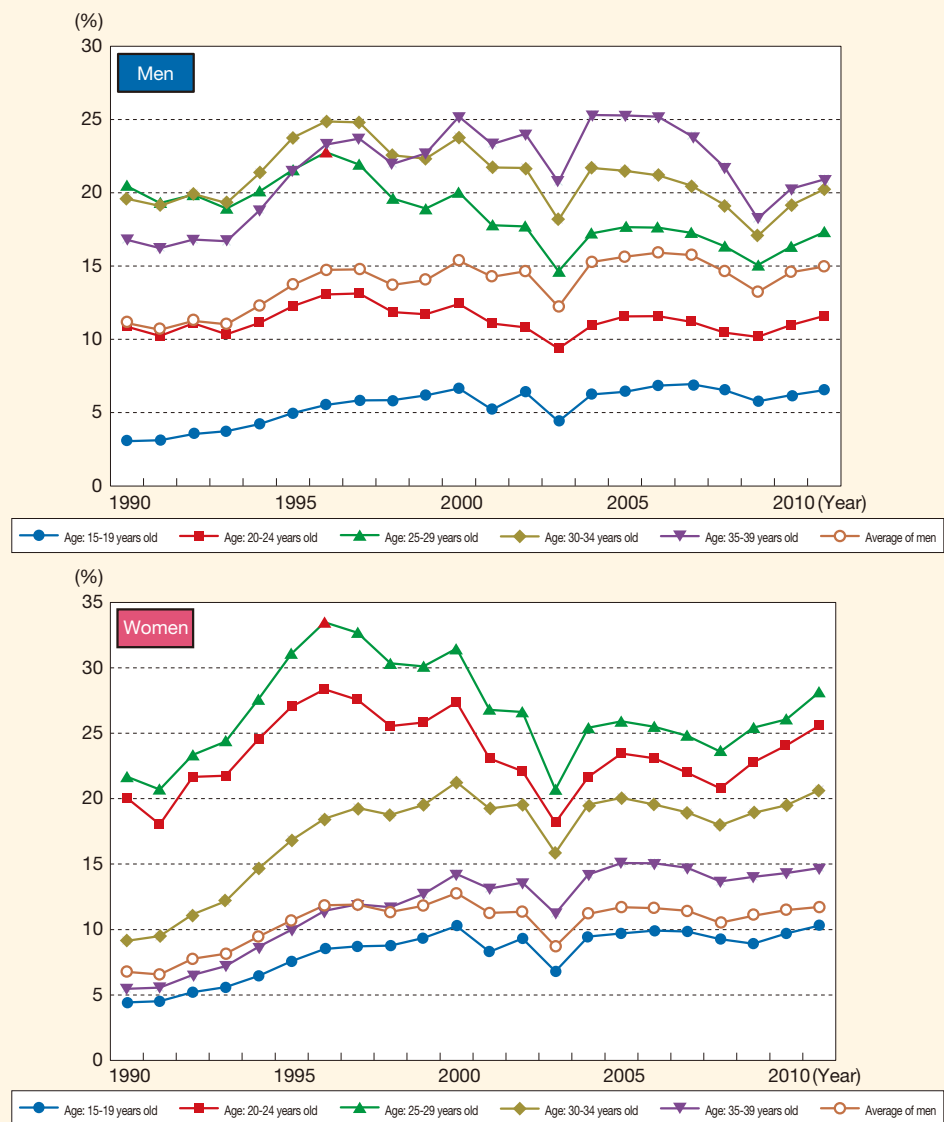
Regarding trends in trips abroad, if we look at the departure rates, there are higher levels of departure rates among people in their 20's and 30's compared to other age groups. However, if we compare departure rates from 1996 and 2011, the departure rates for people in their teens and people in their late 30's and older are rising, but departure rates for people in their 20's and early 30's are dropping, especially for those in their late 20's, with the biggest decreasing margin of 5.5% (Graphic 189).



If we look at the trend in departure rates by gender, and by age group, we can see that there is a difference in trends between men and women. For men, those aged 15-19 years old have the lowest levels of departure rates, but as the age group gets older, from 20-24 years old, 25-29 years old, 30-34 years old, and 35-39 years old, the level of departure rates progressively rise. In comparison, for women, while the trend of those in the 15-19 years old age group having the lowest levels of departure rate is similar to the men, the departure rates rises for the 20-24 years old age group, and then the highest level of departure rates is seen in the 25-29 years old age group. From there, for the 30-34 years old and 35-39 years old age groups the departure level decreases to below the level of women in their 20's, though the level is still higher than the overall average from all age groups. From this we can see that most women travel abroad during their 20's to 30's.

If we look at the long-term trends, for men, from the beginning of the 1990's to mid 1990's the departure rates rose in each age group. Since then though, aside from the 15-19 years old age group, the departure rates have continually declined. In the past few years the rates seem to be recovering, but are still at lower levels than during the mid-1990's. For women, the departure rates rose from the beginning of the 1990's to mid 1990's in each age group, similar to men. However, since then the departure rates for the 20-24 years old and 25-29 years old age groups have decreased significantly, and though the rates seem to be recovering in recent years, they remain at lower levels than in the mid 1990's. In other age groups, though there were temporary drops in 2003 and 2008, the overall departure rates are showing a rising trend (Graphic 190).

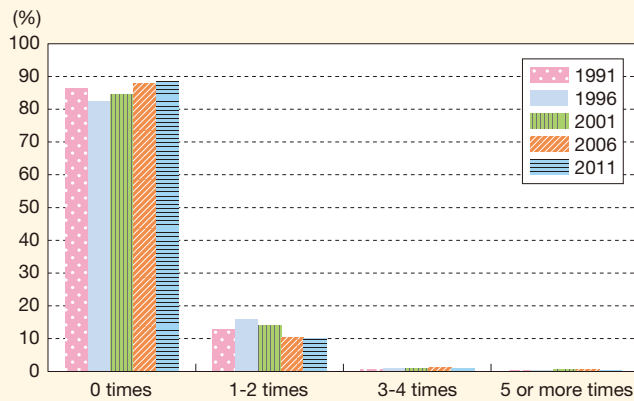
Graphic 190 Trend in Departure Rates for Men and Women by Age Group



Source) Developed by the MLIT from: MIC "Census", "Population Estimates"; Ministry of Justice "Immigration Statistics"

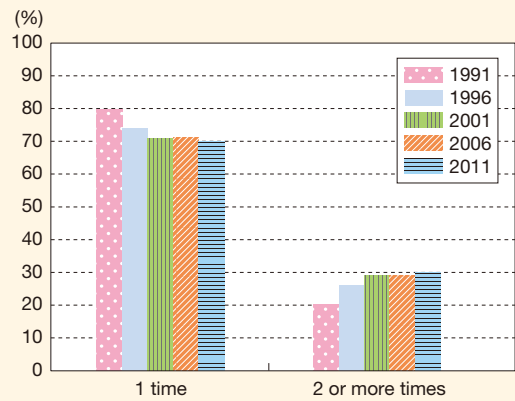
When we look at the trend in international trips of people in their 20's by the number of trips, similar to domestic trips, the percentage of those who do not go on any international trips (people who answered 0 times) is continually rising. However, if we look at the number of trips taken out of the people who have gone on international trips, though the number of people who have gone on one such trip is decreasing, the number of those who go on more than two international trips is increasing. We can see from this that there are those who do not travel abroad at all, and those who frequently travel overseas, which results in a polarization of international travel trends (Graphic 191, 192).

Graphic 191 Trend in Traveller Rates by Number of International Sightseeing Trips Taken by People in their 20's



(Note) Traveller rate (=total of number of people who took a trip within a year/total population)
 (Source) Developed by MLIT from: MIC "Social Life Basic Survey"

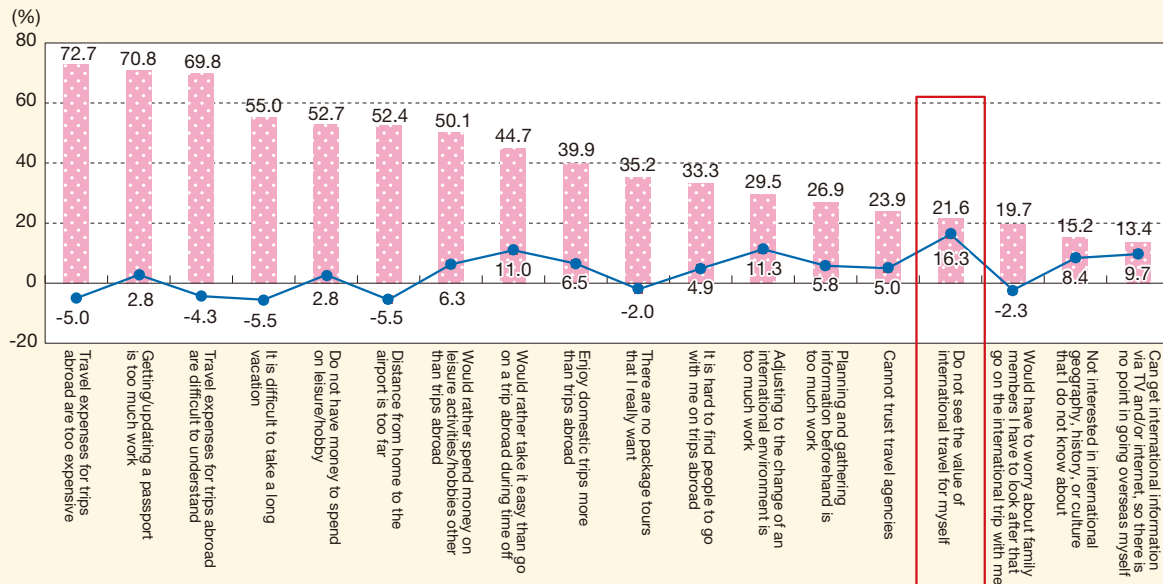
Graphic 192 Trend in Number of International Trips Taken by People in their 20's who have Taken an International Trip



(Note) Population of people in their 20's by number of overseas trips taken/population of people in their 20's who have gone on an overseas trip within a year
 (Source) Developed by MLIT from: MIC "Social Life Basic Survey"

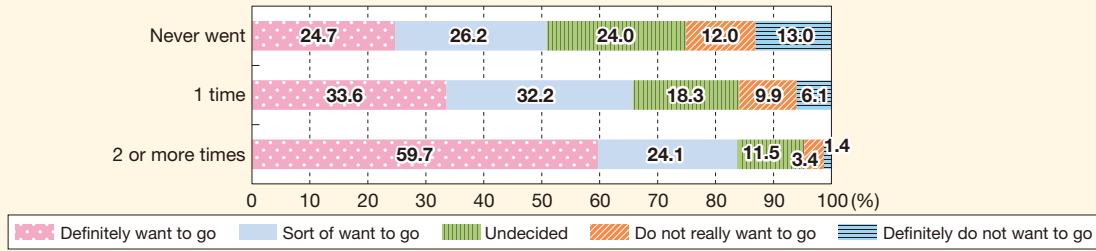
This polarization in the travel trends is thought to be based on travel demand arising from past travel experiences. If we focus on the difference in the items listed by people who have experienced international travel and by those who have not, the biggest difference was seen in people responding, "Do not see the value of international travel for myself." Regarding this item, there seem to be indicators that suggest that if a person experiences even one trip overseas, they understand the value of that experience, and are more likely to be motivated to plan a next trip (Graphic 193). If we look at people's travel intentions by the number of times a person has taken a trip, the more a person has had international travelling experience, the higher their intention to take another trip abroad (Graphic 194).

Graphic 193 Deterrents for International Travel



(Note) 1 ● Percentage of people who answered as never having gone abroad – Percentage of people who have travelled abroad (1 time)
 2 Surveyed men and women between aged 15-39 (overall n=4740)
 (Source) Developed by MLIT from: Japan Association of Travel Agents "Survey regarding Overseas Travel"

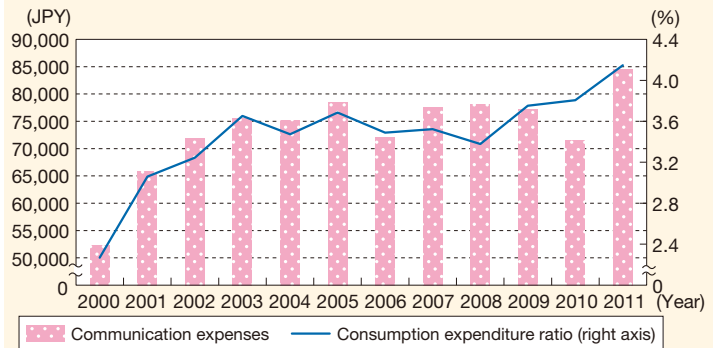
Graphic 194 International Travel Intentions of Young People (by International Travel Experience)



(Note) Surveyed men and women aged 15-39 years old (Overall n=4740)
 (Source) Developed by the MLIT from: Japan Travel and Tourism Association "Survey regarding Overseas Travel"

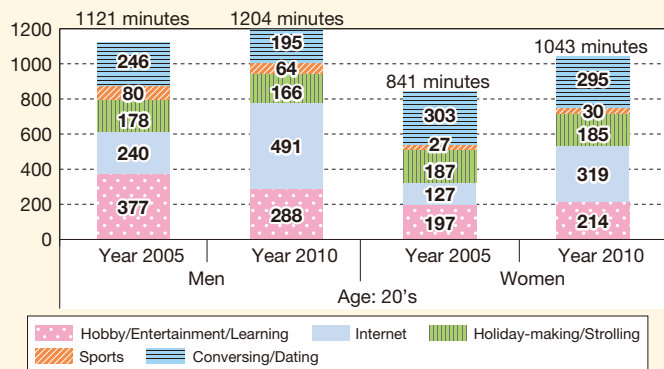
If we look at the deterrents for international travel for young people, the top items are things like, "Travel expenses for trips abroad are too expensive," and "Do not have money to spend on leisure/hobby," which shows that for most people the lack of funds is the deterrent. There were also a lot of people who replied, "Would rather spend money on leisure activities/hobbies other than trips abroad," which shows that they do not have a lot of money to spend on leisure or hobbies, or if they do, travel has fallen in the list of priorities for spending money. Another deterrent for taking a trip abroad which many people listed was, "It is difficult to take a long vacation," despite the fact that allotment for days off have increased for both men and women from 2005 to 2010. However, though the total number of days off may have increased, because the days off must be taken in smaller increments, the reality seems to be that it is difficult to get enough time off in one vacation to take a trip. Furthermore, in terms of the way people are spending their leisure time, both men and women show significant increase in the amount of time they spend online, and this combined with the increase in the percentage of spending on communication expenses such as a mobile phone, we can see that the popularization of the internet and mobile phones has changed the way people spend money, which in turn affects the trends in travel (Graphic 195, 196).

Graphic 195 Communication Expense of Mobile Phones and its Percentage in Total Expenditure



(Note) Average yearly mobile phone communication expense and the percentage of said expense out of total consumption expenditure of single person under 34 years old households
 (Source) Developed by MLIT from: MIC "Household Survey"

Graphic 196 Increase and Decrease of Leisure Time, and How Leisure Times is Spent



(Note) 1. Values within the bar graph are average amount of time spent (Unit : Minutes), values on top of bar are total of average times.
 2. Each time amounts are average time spent on a single weekday multiplied by 5, combined with average time spent on Saturdays.
 3. Internet usage time is calculates time spent for hobby/entertainment/learning, and excludes work-related time.
 4. Each time amount may include activities that are done simultaneously, but each time amount is calculated by total time spent on each activity.
 (Source) Developed by MLIT from: NHK Broadcasting Culture Research Institute "2010 NHK Japanese Time Use Survey"

(New Developments related to Travel)

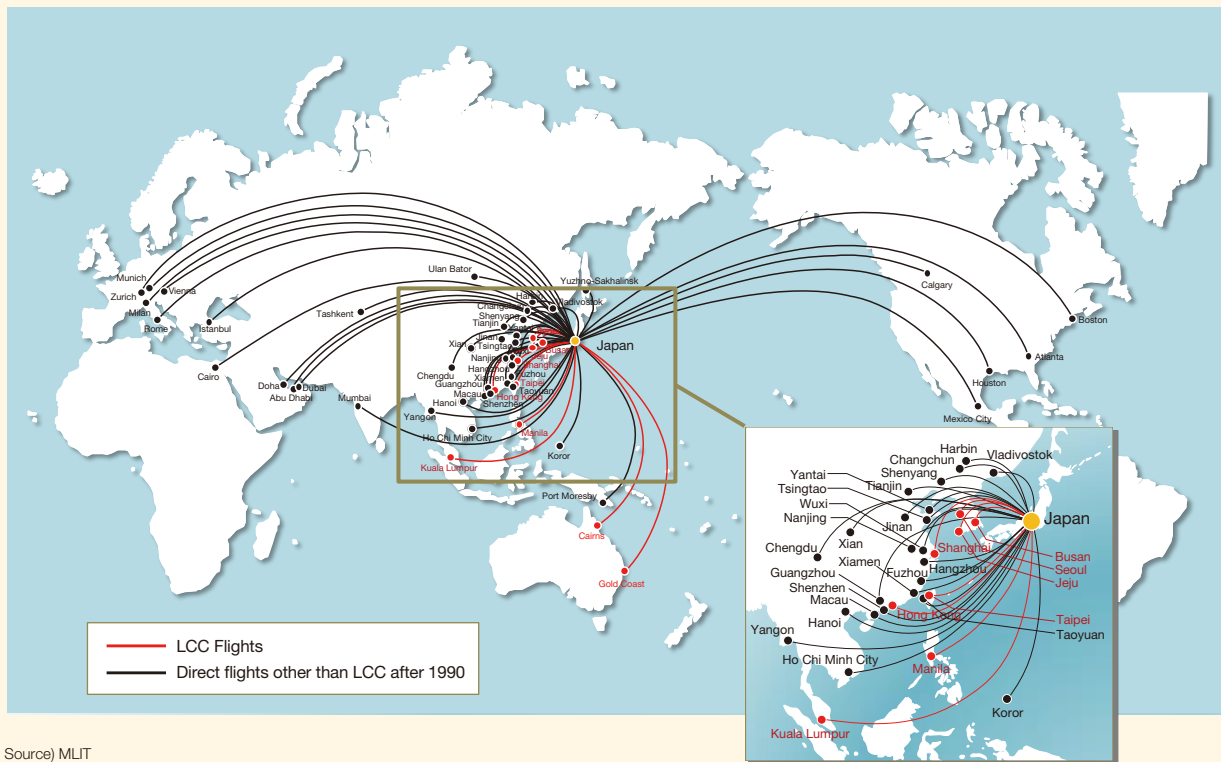
As we saw earlier, the activities of the current generation of young people, whether in regards to domestic or international travel, are less active compared to previous generations of young people. However, there are some new developments related to travel for the current youth which we will introduce below, that have the potential to affect the future travel

trends of young people.

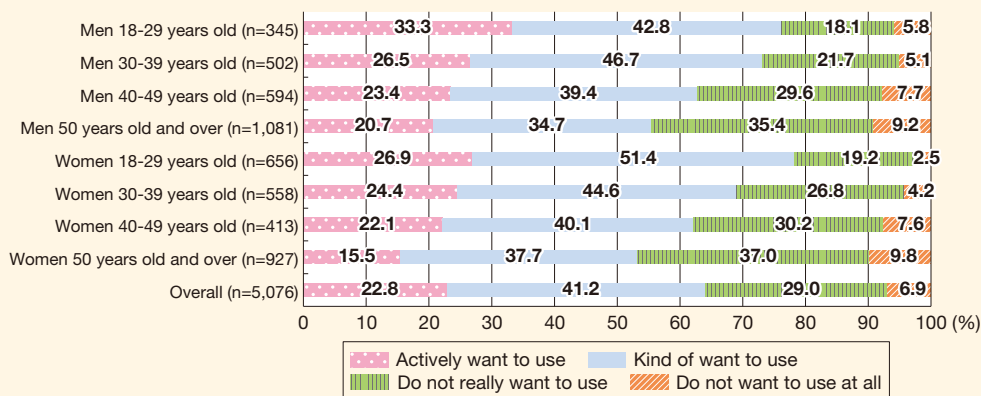
① Improved Convenience of International Travel

In May 2012, Peach Aviation Co., Ltd. began to operate a direct flight between Osaka (Kansai) and Seoul (Inchon), which was the beginning of other LCC (Low Cost Carriers) in Japan starting to operate international flights, and the number of other international flight routes and the frequency of such flights are slowly increasing (Graphic 197). As the convenience of international travel improves year by year, with lower costs, direct flights, and more choices in destination cities, there is a possibility that there will be a new travel demand from people who had previously been unable to take international trips due to financial reasons or time constraints. According to a survey conducted regarding intentions to use LCC for future international travel, when analysed by age group, results showed that the younger the age group, the higher their intention to use these LCC services (Graphic 198).

Graphic 197 Direct Flights from Japan that Started Operating after 1990



Graphic 198 Intention to Use LCC for Future International Travel



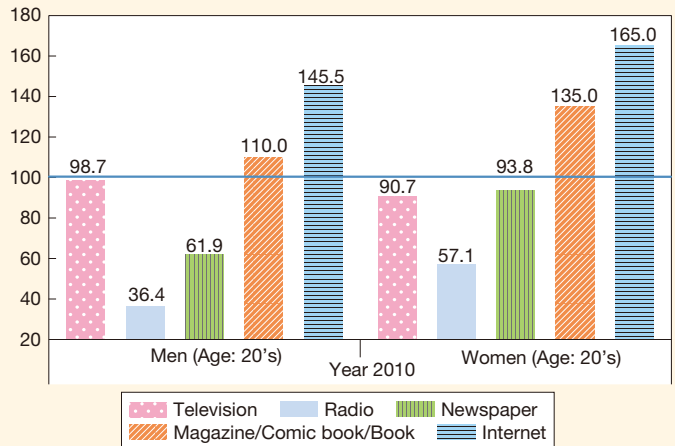
(Note) Surveyed population: 2011 overseas travellers via internet survey
 Source) AB-ROAD Research Center "Survey regarding Satisfaction and Inclination to Use International LCC"

② Popularization of the Internet

As seen earlier, the amount of time young people spend online is increasing significantly, with a growing number of people relying on the internet as the main source of information (Graphic 199).

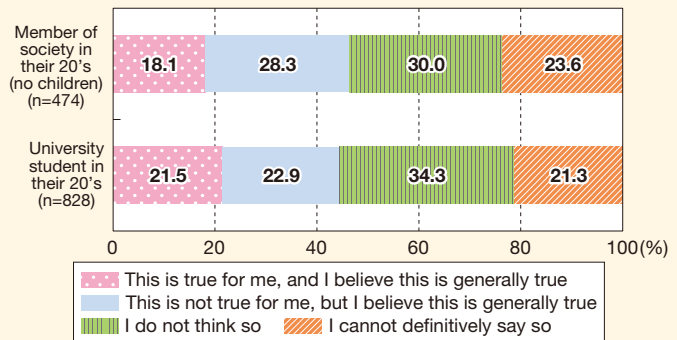
The internet makes it possible to acquire information from all over the world in real time, regardless of one's location, but this seems to have resulted in two conflicting effects upon the behaviour of young people. One effect is that due to the internet becoming popularized, a person can easily obtain information without travelling, which satisfies the person enough so he or she no longer feels the need to travel (Graphic 200). The other effect is that the popularization of the internet makes it easy to find information about many different places, which makes a person want to travel to such places to see them for him or herself (Graphic 201). Currently, as the amounts of time and money young people spend on the internet continues to grow, while international travel decreases, it seems that the first effect is having more impact. However, in the future, as the information obtained via the internet accumulates personally and in society, it is possible that a growing number of people will no longer be satisfied with information found on the internet, and find that they want to see the actual places for themselves.

Graphic 199 Increase and Decrease in the Percentages of People Who Use Media (Year 2005=100)



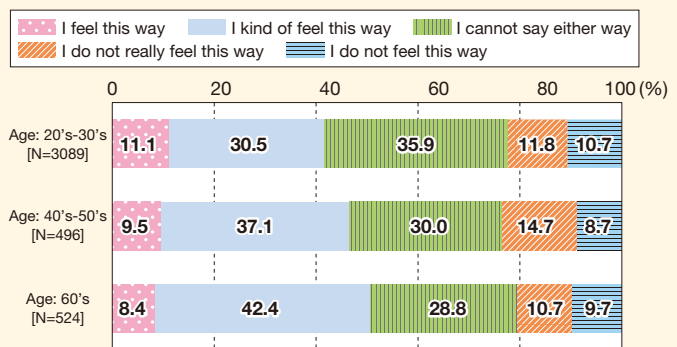
(Note) Increase and decrease in percentage of people using each media for over 15 minutes a day. Source) Developed by the MLIT from: NHK Broadcasting Culture Research Institute "2010 NHK Japanese Time Use Survey"

Graphic 200 Decrease in travel by young people due to ease in obtaining information from popularization of the internet



(Note) Extracted from answers to item stating, "The prevalence of mobile phones and internet usage is the major reason young people do not travel. Entertainment has increased, and one can gain information without travelling." Source) Tourism Agency "2008 Survey regarding Travel Behaviour of Japanese"

Graphic 201 Because information about many other places can be easily obtained due to popularization of mobile phones and the internet, it made me want to travel to see these places in person

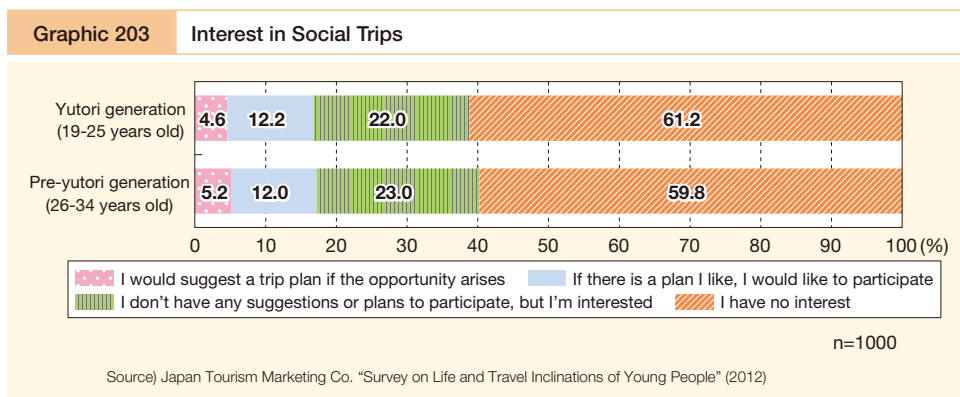
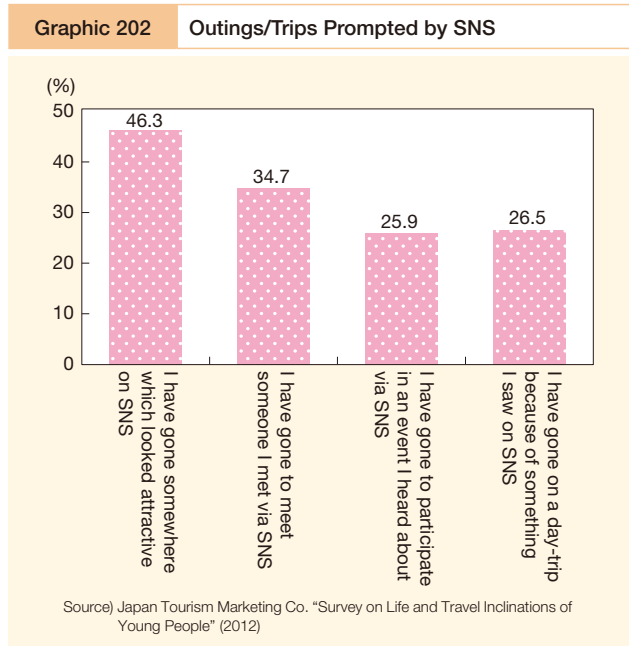


Source) MLIT "Public Awareness Survey"

③ Emergence of New Forms of Travel

We mentioned earlier that the decrease in young people travelling may be the decrease in trips taken with colleagues from school or work, or with friends/acquaintances. Recently, however, due to the proliferation of SNS, ^{Note} there has been a new outings/travel demand prompted by SNS, such as seeing an attractive place via SNS, or going out to meet friends made via SNS (Graphic 202).

There is also the development of people with shared interests planning “Social Trips” (when a travel plan suggestion is posted on SNS, which a travel agency will create tour for if enough people decide to participate) (Graphic 203). Though the concept of “Social Trips” is currently not very well-known, over 40% of young people surveyed have some slight interest in Social Trips, and there is a possibility that this concept may lead to new travel demand in the future.



Note Acronym for Social Networking Service, which is a service that supports interaction between individuals by introducing friends to each other via the internet.

Chapter 3

Efforts Directed at National Land and Transportation

Chapter 2 analyzes what changes are taking place in the livelihood of present-day youth from viewpoints of their ways of working, living and moving. Seeing that the present-day youth will serve as the core of society in the future, we can say that their livelihood will largely shape the future of Japan. Believing that the way the youth live today has effect on their own livelihood in the future, as well as future society, Chapter 3 highlights the direction in which MLIT policies, head in addition to the measures we pursue to provide people of the present and future alike to live a life of affluence.

Section 1 Efforts Directed at the Way of Working

As reported in the preceding chapter, the youth is highly oriented toward a job opportunity of long-term employment, but the job separation rate remains high, suggesting that the gap between the employment environment seen ideal by the youth and that of reality impedes their continual employment. Industries related to national land and transportation urge to improve their employment environments in order to offer job opportunities for the sustained employment of young people. In the light of the declining number of young employees and the aging workers in these industries, it is necessary for them to promote the employment of young people and encourage the transition of skills between generations so they may continue to fulfill their roles in sustaining the livelihood of citizens and the national economy.

Although the employment of female workers is on the rise, it is still subject to a number of problems including the low rate of continued employment after childbirth, a growing population of non-regular employees and though ratio on the rise, the number of women working in management remains low. We see it necessary to forge work environments that are easier and worthwhile for female employees to work through promoting the formation of workplaces where female employees can give birth and raise children without having to quit their jobs, and encouraging the recruitment of women in various kinds of jobs and their promotion to management positions.

(1) Supporting the working of young people

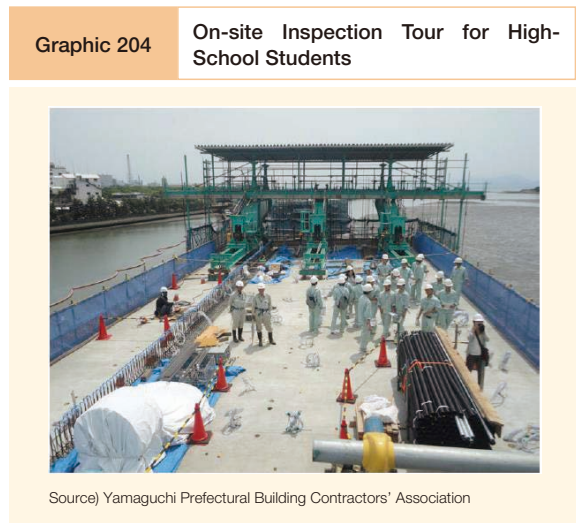
① Efforts directed at the construction industry

As explained in the previous chapter, Japan's construction industry sees a decline in the number of young people seeking employment in the industry and the progress of aging in the working population. As experienced generations of workers near retirement, the need arises to acquire young workers for senior workers to teach skills and expertise in order to underpin upcoming generations, thus toughening the construction industry.

(a) Supporting the employment of young people

We are pushing the employment of young people forward by working in conjunction with the Construction Industry Human Resources Securing and Development Promotion Council, which consists of industrial associations, and government ministries concerned. By actively taking advantage of portal sites for sponsoring catered lectures for students to impart the joy of manufacturing to them, inspection tours of construction sites, on-site hands-on training sessions, internships, and aid to the acquiring construction certifications, thereby motivating students to seek employment in the construction industry (Graphic 204).

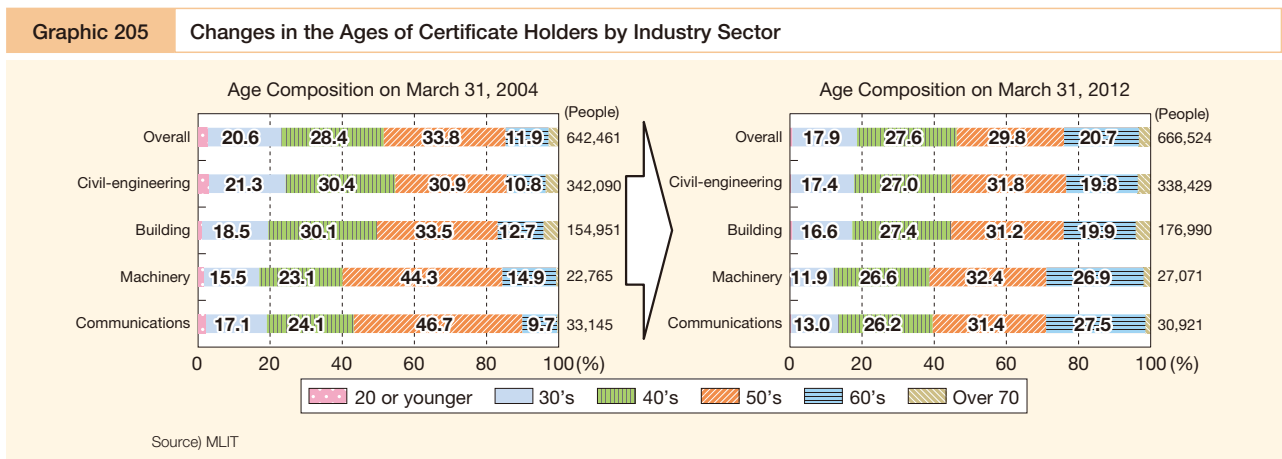
The construction industry plays a vital role in developing, maintaining and managing housing and social infrastructures, keeping local communities safe and secure in times of natural disasters. Promoting the construction industry to help the youth develop a proper understanding of the construction industry is essential to encouraging the employment of young people in the construction industry. To this end, the administrative agencies and industrial associations are committed to deploying strategic publicity campaigns in a unified effort tailored to the audience, including children and general citizens as well as the youth.



(b) Securing and developing experts and skilled workers

Amid the continuing drop in the number of young workers seeking employment in the construction industry, human resources for becoming expert or skilled worker are diminishing. While laws require principal contractors to subcontract projects, the Certified Technical Supervisors under 40 years of age account for only 10% of the entire technical population in some professions in the industry. The progress of aging is anomalous creating the dire need to establish an environment where superb experts can be acquired and cultivated (Graphic 205).

To this end, the MLIT has started exploring the possibility of developing an expert database to gain insight into the status of experts. The Ministry now seeks to build a scheme of giving fair assessment to technically competent experts to motivate those construction firms that house these experts to augment their construction capabilities.



Because the worsening employment environment for skilled workers is considered as part of the reason for the continued drop in the number of young workers seeking employment in the construction industry, efforts will be directed at renovating the employment environment. We will implement further measures aiming to promote subscription to social insurance and other programs and the compilation of information on the qualifications and expertise of skilled workers, such as their training career, to give these workers treatment worthy of their expertise.

Column

Inheritance of Japan's Traditional Wooden Architectural Technology

Although wooden framework dwellings built by leveraging traditional building methods offer excellent characteristics that recommend themselves for construction in a wet Japanese climate, including their ease of repair for better longevity, addition and betterment, highly skilled carpenters continue to be increasingly aged while number of newcomers to carpentry declines, making it difficult to hand over skills from generations of younger successors.

Under the circumstances, the Carpenter Training School (Daiku Ikusei Juku) has been open since 2003 to rebuild the regime for producing wooden dwellings using traditional building methods and to develop human resources that reinstate the Japanese cultures of craftsmanship and manufacturing.

About 100 youths nationwide, aged from 18 up to 25 (averaging 19 years of age) join Carpenter Training School each year to take three years of on-the-job training and classwork. In on-the-job training, each student is given hands-on guidance on the expertise and skills of building traditional wooden dwellings by a master carpenter at a housing construction site or other facilities administered by host building contractor's offices (566 firms nationwide in April 2013). Classwork delivers to the students an organized theory of the expertise and skills of building traditional wooden dwellings, in overnight intensive camps held for about 60 days at four locations across Japan. A completion production session is in store for the students in their third year of training. Students from all over Japan get together to build up one wooden framework building in a joint effort in a demonstration of what they have acquired so far. The training curriculum is organized to let students master the fundamental skills of carpentry.

A scene of on-the-job training



Source) (One company) Carpenter Training School

A scene of a completion production session



② Efforts directed at the tourism industry

The tourism industry is generally accepted as an attractive workplace, such that it is popular among students as a hoped-for place of employment, but its real labor environment is not necessarily that favored when compared with other industries. The low rate of retention, generally known as the “Hurdle of Three Years,” long working hours and poor working conditions are among the problems that need to be rectified. Utilizing the power of experienced workers who are equipped with excellent skills, as well as securing the opportunities of their employment, would also be necessary. For these purposes, programs designed to foster human resources through collaboration between the industry, educational institutions and the administration, including the launch of an internship model project and the development of a college education program, are under way to stimulate youths' interest in the tourism industry and deepen their insight into the tourism industry to let the industry come to stay as an attractive workplace (Graphic 206). In the future, it would be necessary to provide youths with opportunities to think about their career so that they can have far-reaching career paths and life plans, as well as cut their working hours and improve their labor environment through an appropriate exercise of labor management or the like.

Graphic 206 Internship Model Project

Continuous internship

One student receives hands-on internship training individually and continuously across multiple service providers who are connected with series of consumer behaviors (reservation, moving, lodging and so on) to help the student develop a better understanding of the total picture of the tourism industry and also recognize the tasks that face the industry.
(Concept of implementation)

Preparatory period		Internship reception period			Follow-up
		First term (two weeks)	Second term (two weeks)	Third term (two weeks)	
Reception condition coordination	Screening + Prior guidance	Travel industry	Shipping industry, research institute, or related organizations	Lodging industry	Two-way customized feedback between the student who has completed the third term and the business

Long-term internship

One student receives hands-on internship training in one business entity for an extended period of time (at least two months for this model project) to help the student realize the facts about the business challenges that would otherwise be easily left unheeded.
(Concept of implementation)

Preparatory period		Internship reception period (two months at least)	Follow-up
Reception condition coordination	Screening + Prior guidance	Provides a program to enable each student to experience different sections of an enterprise and study specific tasks from a viewpoint of project implementation.	Two-way feedback between the student and the business

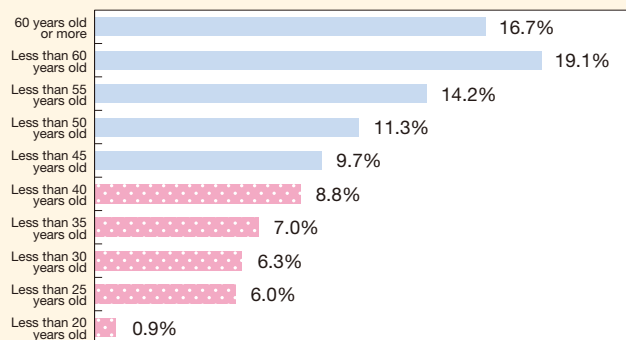
Source) MLIT

③ Efforts directed at the maritime industry

The maritime industry plays a vital role in supporting Japan’s national life and economy as it undertakes 99.7% of Japan’s import and export cargoes and 39.5% of her domestic cargo transport. From a viewpoint of ensuring stable marine transportation, securing and fostering seamen is of prime importance. The number of Japanese overseas shipping seamen continues to decline while domestic shipping seamen get aged than before, urging the development of human resources to meet the needs of both coastal and international shipping (Graphic 207).

Addressing these issues makes it imperative to get more youths interested in becoming a seaman, as by promoting the charms of working at sea and taking measures to make the job of seamanship more attractive. Maritime personnel concerned are working in accord to

Graphic 207 Age Composition Ratios of Domestic Shipping Seamen



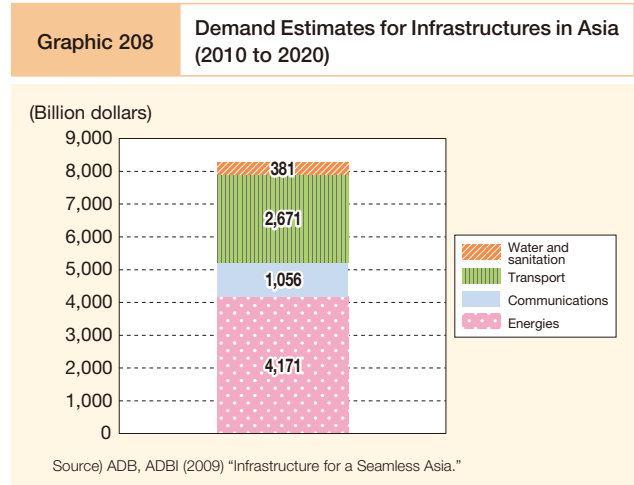
Source) MLIT

develop effective maritime publicity campaigns and to improve the labor conditions and environment for seamen. Further, maritime operators are reviewing their schemes of boarding apprenticeship to develop new seamen ready to work at sea, by introducing boarding drills aboard their own vessels and conducting prioritized boarding drills for would-be seamen at navigation training institutes. To promote increased job opportunities for fisheries high school graduates, the boarding career requirements for getting Class 6 and 3 License for Maritime Technical Officer have been eased since April 2013, thereby trimming the periods needed to get certified. Further, since overseas shipping seamen are expected to not only fulfill the duties prescribed by their seaman’s competency certificates but also take responsibility to overseas and supervise the overseas seaman who command a majority of Japan’s ocean-going merchant fleet crew, the system of education at seaman education institutes has been reviewed to improve the curriculum aimed at enhancing their abilities, such as English and communication.

④ Human resources sought by developing infrastructures overseas

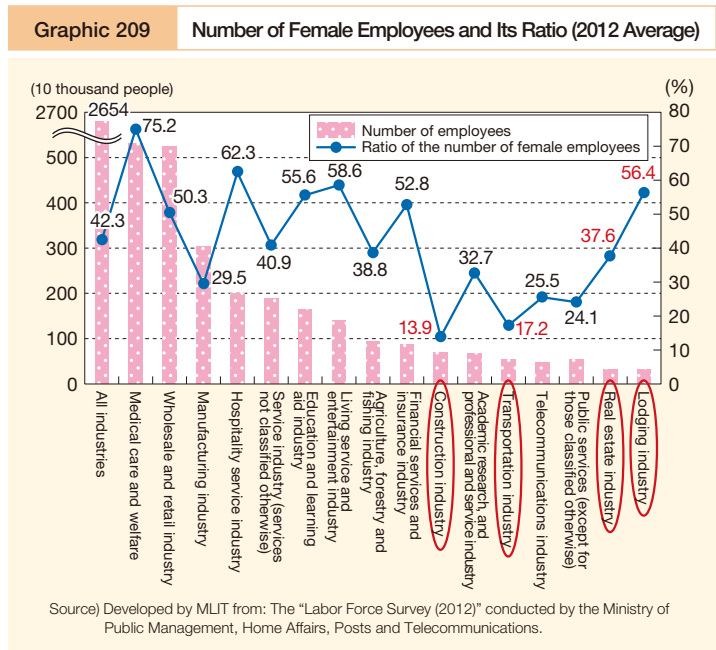
The rapid paces of economic growth and urban development in countries around the world, especially Asian nations, coupled with expanding population mainly in developing nations, global economic leaps and the resultant rises in the income level, increases in the medium-income population and so on, promise bulging demand for the development of infrastructures around the world. An over U.S. \$8 trillion worth of demand for infrastructures is estimated for Asia by 2020 (Graphic 208).

Japan’s domestic market continues to shrink amid rapid aging of the population and falling birthrates. Under the circumstances, it would be essential to deploy infrastructures that build on Japan’s traditions of expertise and experience and thus to assimilate the growths of these individual nations, which should in turn help sustain Japan’s growth. Promoting the overseas deployment of infrastructures should require securing and develop the supporting human resources in a far-reaching collaboration among industry, academia and government, including academic societies and colleges and research institutes at home and abroad, as well as operators in the industries connected with national land and transport. Particularly, securing and developing human resources of global dimensions who have right knowledge to aid in the planning stage, the most upstream process of a project, and in the post-construction maintenance and management stage of the project, a downstream process, is required. These human resources should have a concept of the execution of international contracts in practice, labor management and project financing to facilitate a fully integrated flow of order taking. In March 2013, a program that exchanges human resources between Japan’s construction industry and colleges in France, the U.K., Thailand and the Philippines in a bid to develop human resources who possess international construction capabilities and personal connections with overseas leaders, has been launched.



(2) Support for female employment

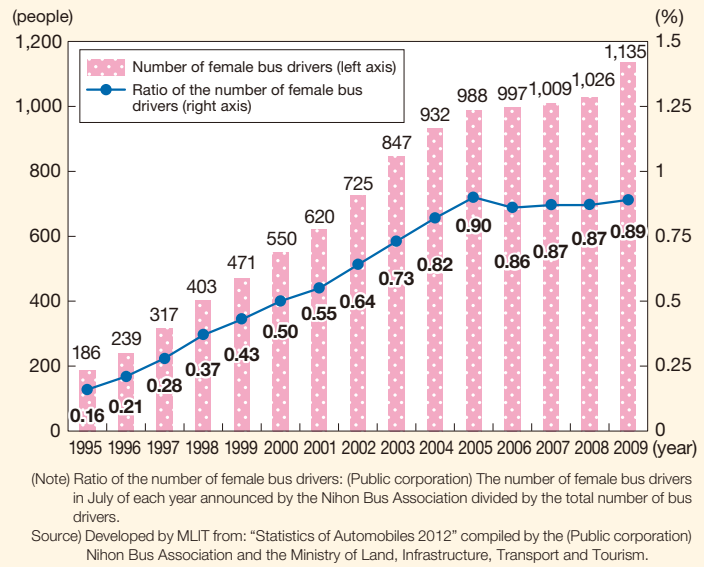
A survey of the industries relating to national land and transport shows that 56.4% of the employees in the lodging industry are female, higher than the industry average of 42.3%. Female employment has penetrated some sectors of the construction and transport industries, like female drivers in bus operations, but the ratio of the number of female employees to the total work forces in these two industries remains low when compared with other industries, at 13.9% and 17.2%, respectively (Graphic 209, 210).



Use of female labor force is important to achieve sustained economic growth for Japan while aging of the population and falling birthrates prevail. Boosting female participation in the industries in the fields of national land and transport would be essential.

Graphic 210

Number of Female Bus Drivers and Changes in the Ratio of the Number of Female Bus Drivers



① Installation of childcare amenities as part of railway stations, etc.

The betterment of childcare services is a key element for women seeking to be successful at both their childcare and career. Particularly, the childcare support amenities set up as part of railway stations allow these female workers to leave their children under care on their way to work and also have access to a variety of facilities, particularly those installed in and around the stations, such as medical, welfare and administrative facilities, supporting the lives of women who work their ways to raise children. For this reason, life support facilities, such as childcare amenities, are installed as part of existing railway stations through the implementation of General Improvement of Railway Stations or the like to augment the convenience for child-raising families around the stations (Graphic 211).

Graphic 211

Concept of Childcare Facilities Installed As part of Railway Stations or the Like



(Source) MLIT

② Improvement of the environment for female employment

Various efforts are ongoing in industries relating to national land and transport to encourage women to work outside. The ratio of the number of female employees to the total work force in the construction industry used to be low when compared with other industries, because the construction industry had traditionally been thought of as a "workplace for men." But the entrepreneurs have now begun to promote the continued employment of female workers. Ongoing moves to broaden the scope of job fields for women include, for example, active employment of female employees as sales staff for a housing remodeling business previously dominated by men, out of the idea that taking advantage of the perspectives of women could help come up with better suggestions to address the various sensitivities needed for home building. Further, various efforts aimed at supporting the career of female employees are in place, including an enhanced childcare leave or short-time work system and the implementation of various training programs and positive appointment of female managers.

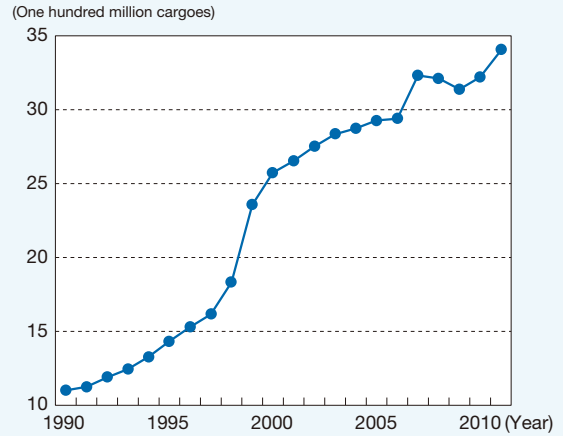
Column

Efforts Directed at Broadening the Environment for Women at Work

The home delivery service business tends to be thought of as masculine work, but it now promises a growing job opportunity for women as cargoes continue to get lighter and smaller in the present context of proliferating Internet sales. Also, customers increasingly praise the meticulous services delivered by female workers, such as heeding the direction in which cargoes are placed on delivery.

Focusing on the home delivery service business, Sagawa Express Co., Ltd. promotes the development and promotion of female employees mainly as drivers and many of such female employees are at work at the service centers where freight is collected and delivered on trucks or on tricycles. Female employees now account for about 20% of the total work force in the group. Sagawa Express aims to boost this ratio to 30% by 2014. As part of this aim, the company introduced three-wheeled electric vehicles in Nakagyo-ku, Kyoto City in September 2012 to help lighten environmental load and to provide a new means of delivery for women. For women who may recoil at the thought of driving trucks, the compact yet agile three-wheeled electric vehicles might allow them to collect and deliver cargoes efficiently through alleys or on slopes.

Developments in the number of cargoes weighing up to 30 kg handled by home delivery service



(Note) The home delivery service refers to special loading motor truck transportation or a similar form of transportation of each individual cargo under a special assigned name, weighing up to 30 kg.
Source) MLIT

A Scene of Delivery on an Three-Wheeled Electric Vehicle

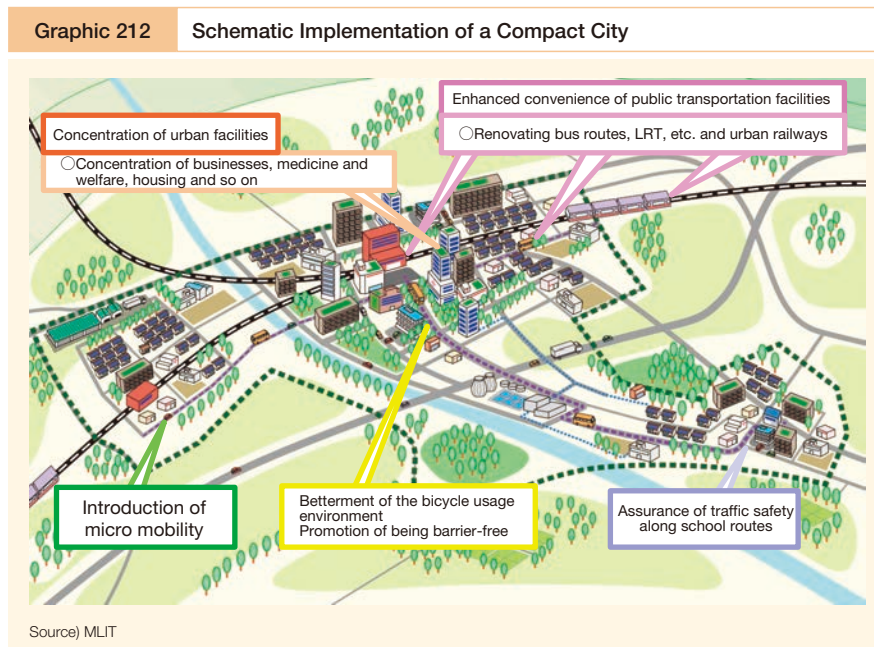


Source) Sagawa Express Co., Ltd.

Section 2 Interdisciplinary Efforts Relating to the Ways of Living and Moving

(1) Forming a compact city

As described in the foregoing chapter, the living sphere of present-day youths may have been made smaller than before as more of them choose to live downtown or in areas close to the railway stations or their range of ultra-lightweight vehicles for outing has narrowed. Renovating a community to reflect these trends in the way youths live would be important, in which administrative services are accessible more efficiently by taking advantage of the stock of urban infrastructures developed so far. The goal is to form a compact city, in which the local residents have ready access to medical and welfare facilities, commercial facilities and other urban conveniences by means of public transportation facilities, without too much resort to their cars, because they are conveniently located in relation to where they live. Furthermore, walkways and bicycle tracks need to be developed, made barrier-free and so on in an integrated manner to secure the convenience and safety of moving by walking on foot, on bicycles and so on (Graphic 212).



① Concentration of urban facilities

When a compact city takes shape, it should enable all of us to go to enjoy the benefits of the services prerequisite to our day-to-day living, such as medical, welfare and commercial facilities, and administrative services by means of public transportation, or without too much dependence on our cars. Particularly, child-raising families will have easier access to their workplaces, childcare support facilities and so on, as they are conveniently located in relation to their dwellings, which could lead to better compatibility between work and childcare. For this reason, the development of cooperative houses, public utility facilities, etc. in central urban areas should be pursued by leveraging the central urban area cooperative housing project, a Downtown Housing Renovation Fund and the like. The new or parallel construction of medical, nursing-care and childcare facilities and the like should also be supported in the mean time to facilitate the rehabilitation of housing developments, reconstruction of public rental housings, the formation of hub railway stations and son on (Graphic 213).

Graphic 213 An Application of a Downtown Housing Renovation Fund



Source) (Public corporation) Urban Renewal Association of Japan

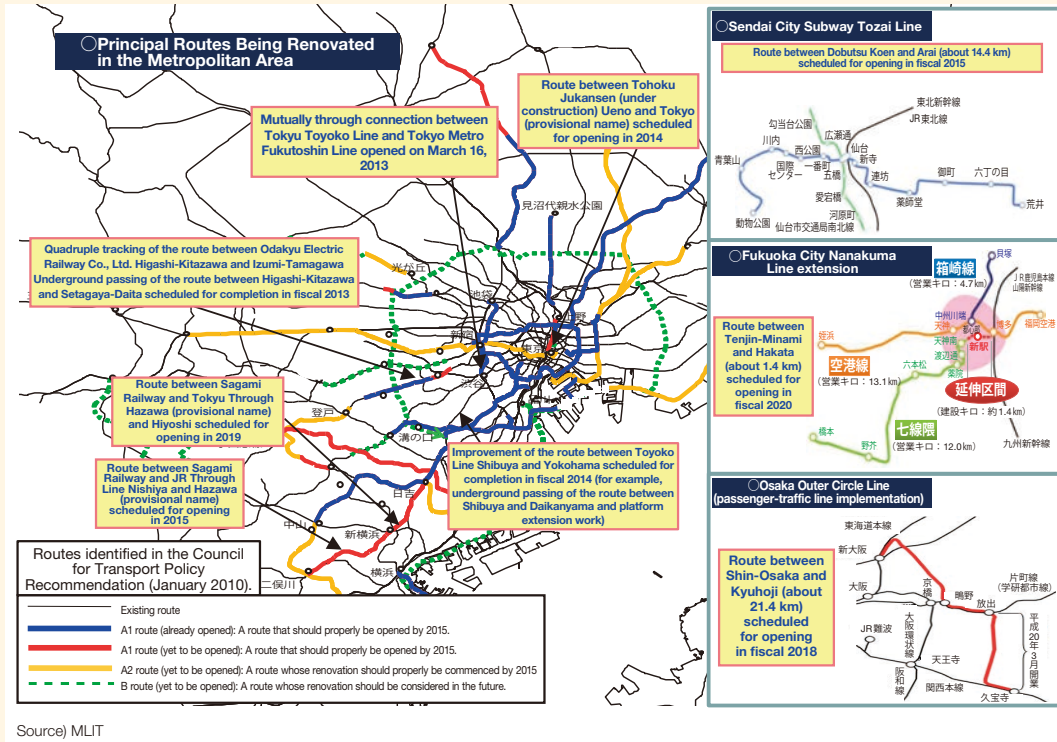
② Enhanced convenience of public transportation facilities

The area in which urban facilities are concentrated and the area in which public transportation services are provided are two opposed sides of the same coin and are inexplicably linked to each other, such that it would be effective to have the public transportation services provided in line with the direction of the concentration of the urban facilities. For this reason, the inauguration of new bus lines and modifications to existing bus lines, the development of LRT and other transport systems and so on should be coordinated with the concept of community renovation to pursue the convenience

of the public transportation facilities.

While railways are extensively used particularly in metropolitan areas as a means of transport for commuters to office and school, the development of connecting lines and mutually through connections based on existing urban railway networks is being promoted to resolve the inconvenience of transferring from one line to another and to add to the users' further convenience. Other ongoing efforts include the development of underground rapid networks to help ease congestion while commuting to office and school and the passenger traffic line implementation of freight transport railways to support commuters in the areas along the railway lines (Graphic 214).

Graphic 214 Renovating Railways in the Metropolitan Area



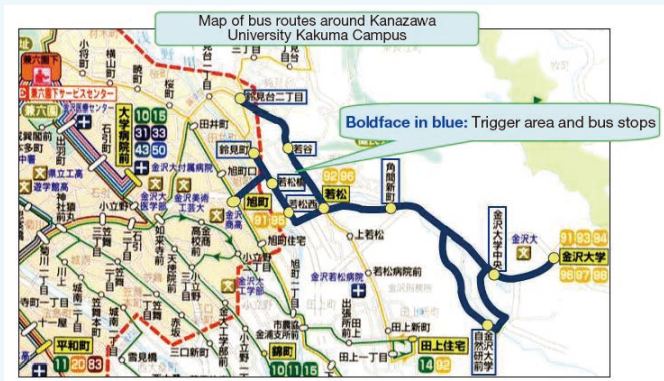
Source) MLIT

Column

Driving Bus Usage with a Trigger - A Scheme in Kanazawa City, Ishikawa Prefecture

Kanazawa City mediates between Kanazawa University and a bus operator (Hokuriku Railroad Co., Ltd.) to encourage students to ride buses run by Hokuriku Railroad to commute to and from the college. Effective since fiscal 2011, the scheme aims at securing the convenience of school busing for students and other people and at encouraging their bus usage. According to this program, the bus operator issues Triggered Test Commuter Passes offering a special discount of 100 yen per ride for passengers taking its

Target routes for Triggered Test Commuter Passes (three years, from April 1, 2011 to March 31, 2014)



Source) Kanazawa University

buses in a 170- or 200-yen fare zone, with the understanding that, if the issue count for a given year should fall short of its target level, the issue of Triggered Test Commuter Passes would be discontinued to revert to the regular student commuter pass fare plan. The scheme is expected to enhance and activate the ultra-lightweight vehicles of uses in and around the target area as it allows them to make a number of moves with a single pass.

Since commuter pass sales for fiscal 2011 stood at 3,001 passes, 149 above its target, the program is carried into fiscal 2012.

③ Promoting the introduction of micro mobilities

Micro mobilities, with a passenger capacity of one or two, are expected to provide a new package of transport functions, such as daily shopping and sending and picking up children, for all generations of people, because they are smaller and more agile than automobiles and which are a convenient means of local transport (Graphic 215).

In January 1, 2013, an accreditation system for micro mobilities started to enable them to run on roads. Some safety regulations for road vehicles (such as seat anchorages) were eased, but subject to certain conditions, such as not running on expressways or like roads, running only in those places that are properly equipped to ensure traffic safety, out of primary consideration for safety assurance. A system that subsidizes the implementation of business projects relating to the preliminary or trial introduction of micro mobilities integrated with the community renovation and other programs being pursued in the initiative of local governments or the like has been inaugurated. More efforts to promote the introduction of ultra-lightweight vehicles will continue while promoting a public recognition of the vehicles through the creation, etc. of best practices.

In March 2013, micro mobilities were loaned to general families in the child-raising generation in the Tama Garden City area in Yokohama city for a certain period of time in a survey to monitor changes these mobilities may bring into their day-to-day lives.

④ Assurance of traffic safety along school routes

For child-raising families, the safety of the roads in and around their dwellings is an essential element of childcare (Graphic 147). Efforts are being pursued to keep children safe and secure as they walk along school routes, by renovating the sidewalks, paving the road shoulders in color, setting up guard fences and the like on the basis of the results, etc. of

emergency joint checkups conducted in collaboration with schools, the parents, police and more (Graphic 216, 217).

Graphic 215

An Example of a Micro Mobility



Source) MLIT

Graphic 216

Renovating a Sidewalk



Source) MLIT

Graphic 217

Setting Up a Guard Fence



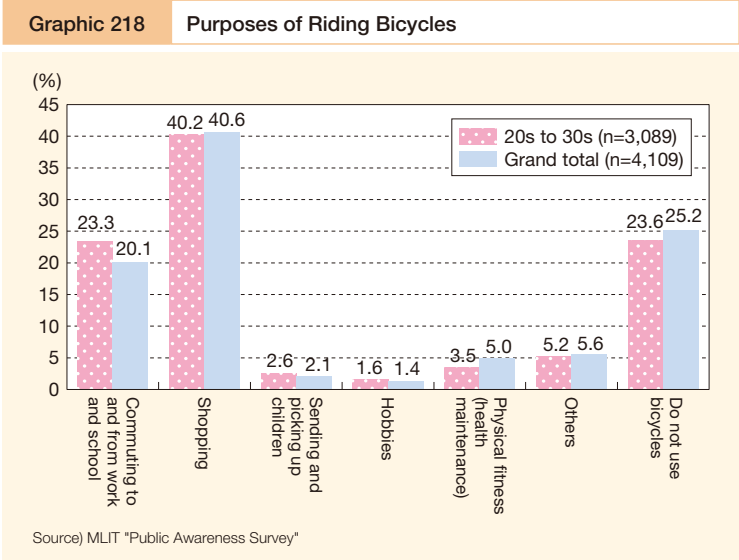
Source) MLIT

⑤ Improvement of the bicycle usage environment

Bicycles, now in elevating demand amid growing consciousness of health and the environment, play an important role as a common means of transport in our day-to-day living, for example, youths using bicycles to commute to office and school and child-raising families sending and picking up their kids. A survey conducted among youths asked if they used bicycles or not and, if they did, for what purposes. Three out of every four responded that they used bicycles and 23.3% of them used bicycles for commuting to office and school, when compared with 40.2% for shopping (Graphic 218).

While bicycle usage progresses, the expansion of bicycle running spaces, such as bicycle tracks and lanes, that are separated from automobiles and pedestrians remains negligible as a whole. Moreover, the passage of bicycles in driveways is seen impeded by stopped or parked cars. Hence, taking measures in both terms of hardware and software to create a bicycle usage environment that allows bicycles to run with safety and comfort while ensuring enhanced pedestrian safety has become an urgent issue.

In the circumstances, steps have been taken to develop and maintain area-specific bicycle network plans, enforce thorough adherence to traffic rules and so on pursuant to guidelines that have been compiled jointly with the National Police Agency (published in November 2012) (Graphic 219).



Graphic 219 Examples of forms of Road Maintenance and Improvement

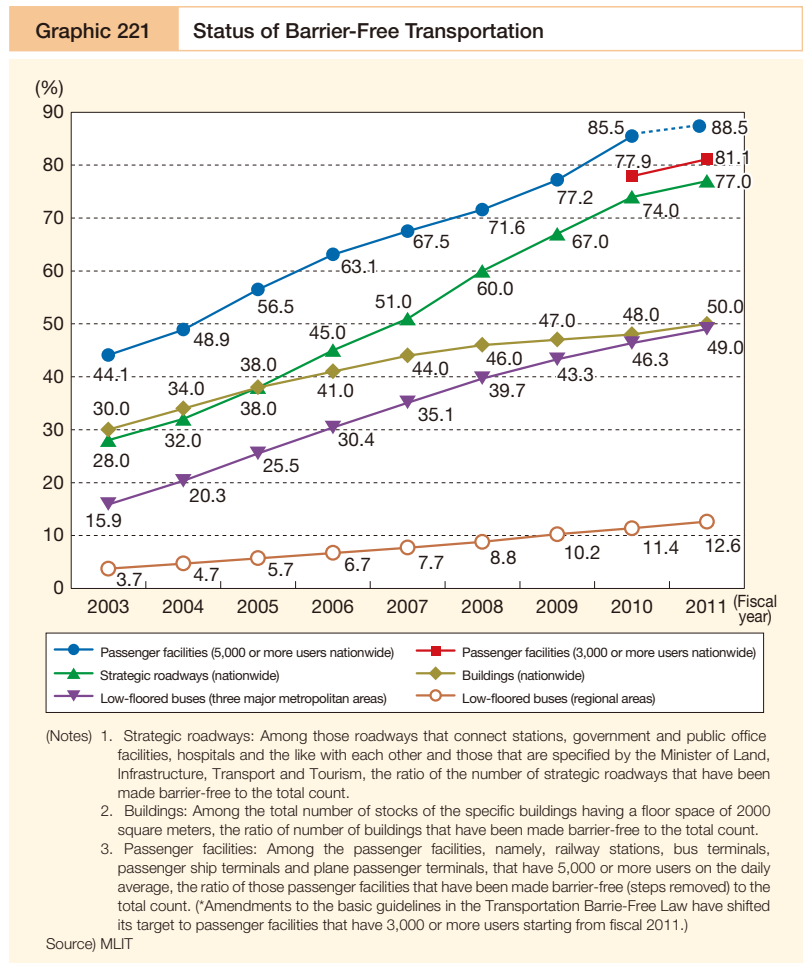
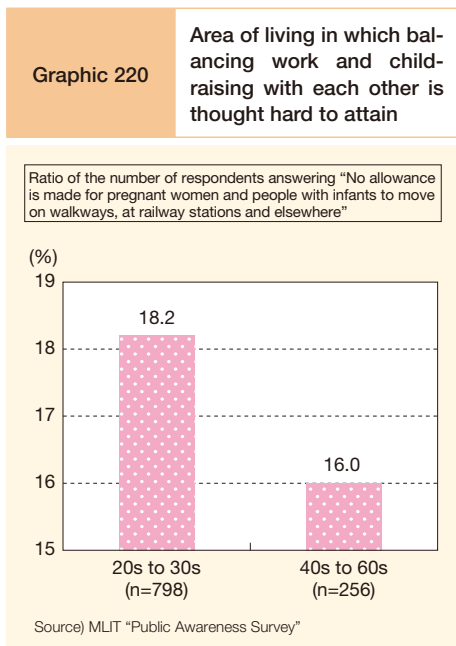
Bicycle road	Bicycle lane	Mixed driveway
Bicycle passage space, which is structurally separated by some object, such as a curb line.	Vehicular lane dedicated to riding bicycles, specified by traffic regulations. Bicycles and automobiles are separated visually.	Bicycles and automobiles are mixed in driveways. Bicycle passage positions are expressly marked, with road shoulders being colored, strip-shaped road markings, pictograms, etc. being used to alert automobile drivers.

Source) MLIT

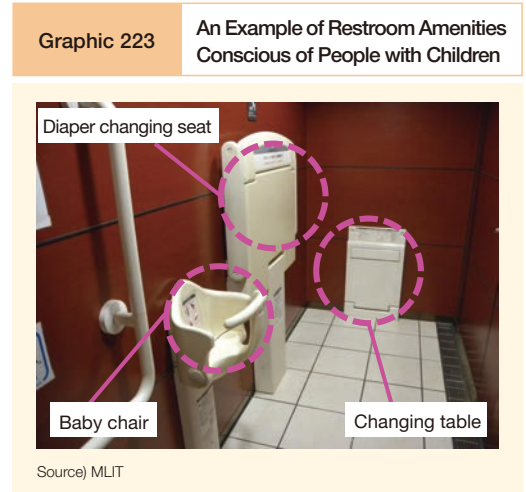
⑥ Promoting barrier-free transportation

In the Public Awareness Survey, a greater proportion of youths in their 20s and 30s than people in other age groups cited “No allowance is made for pregnant women and people with infants to move on walkways, at railway stations and elsewhere” as an item of living in their living area district in which they live district in which balancing child-raising with work is thought hard to attain (Graphic 220).

Efforts to make transportation barrier-free are in progress to enable all generations of people to move through town safely and comfortably, including the development of wider walkways, elimination of steps from the walkways, introduction of low-floored buses and installation of station elevators. buildings or like facilities that are used by people with infants, Further, the installation of multi-purpose restrooms, nursing spaces, etc. is being promoted in buildings or like facilities that are used by people with infants (Graphic 221, 222, 223).



- (Notes)
1. Strategic roadways: Among those roadways that connect stations, government and public office facilities, hospitals and the like with each other and those that are specified by the Minister of Land, Infrastructure, Transport and Tourism, the ratio of the number of strategic roadways that have been made barrier-free to the total count.
 2. Buildings: Among the total number of stocks of the specific buildings having a floor space of 2000 square meters, the ratio of number of buildings that have been made barrier-free to the total count.
 3. Passenger facilities: Among the passenger facilities, namely, railway stations, bus terminals, passenger ship terminals and plane passenger terminals, that have 5,000 or more users on the daily average, the ratio of those passenger facilities that have been made barrier-free (steps removed) to the total count. (*Amendments to the basic guidelines in the Transportation Barrier-Free Law have shifted its target to passenger facilities that have 3,000 or more users starting from fiscal 2011.)

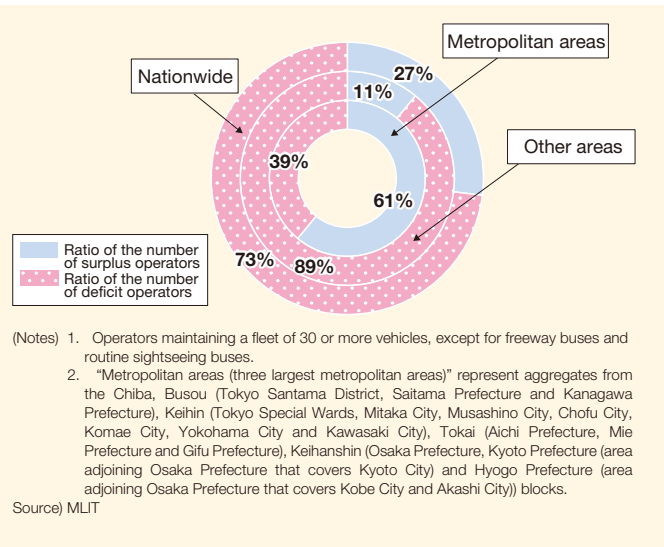


(2) Securing and maintaining transportation in rural regions

People are seen to have more resort to automobiles to move in rural regions than in urban regions, but the gap in the sphere of living activity could widen between those who have access to automobiles and those who do not, such as children if public transportation should recess. Because railways and buses play a key role in rural regions as a means of transport to and from office, school and elsewhere, it is important to secure and maintain such vital transport, but bus operators find it increasingly difficult to make both ends meet on a self-support accounting principle amid, in particular, a declining number of users in an increasingly underpopulated area (Graphic 224).

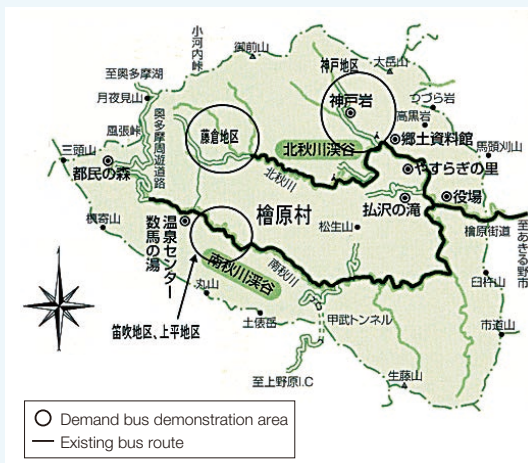
Under the circumstances, The Program for Ensuring, Maintenance and Improvement of Local Public Transportation Systems has been implemented to support local bus routes and the like subject to deliberation with local parties concerned.

Graphic 224 Financial Status of the General Common Bus Business (FY2011)



Case Study Securing a Means of Going to School in Hinohara Village, Tokyo

In Hinohara Village, Tokyo, demand buses "Yamabiko" operate in public transportation-poor areas to support the daily lives of elementary school pupils and junior and senior high school students. Route buses that run on highways cover key lines, while demand buses undertake branch lines.



* The convenience of transferring between a route bus and a demand bus is assured to reflect local residents' opinions.

Source) Hinohara Village

Section 3 Efforts Directed at the Way of Living

As reported in the preceding chapter, as more people choose to stay single or to marry in a later stage of their life and birthrates continue to fall, households have transformed from the ways they used to be, with a single person, a married couple only, and families living with their parents under the same roof on the rise. Further, youths' needs for dwelling have changed as more of them seek to live in the central area of a town or near a station. While youths continue to aspire for home ownership, the declining homeownership ratio on a nationwide scale and the high rate of dissatisfaction with private rental housings, which is typically inhabited by youths, seem to suggest that youths may not have attained the status of residence they seek, making it necessary to provide dwellings tailored to their needs. For this reason, programs will be launched to support would-be homeowners to acquire quality homes at an affordable cost and help improve the quality of private rental housings. Further, support will also be extended to those who need special care for housing amid rises in their burden of housing expenditure to help stabilize their dwelling, by providing public rental housing, etc.

(1) Support for home ownership

The loan rates relating to housing that possesses excellent durability, fluidity and other characteristics have been lowered by the securitization support business, Flat 35S, administered by the Japan Housing Finance Agency to facilitate the ownership of good-quality homes. In addition, tax incentives are in place, such as housing loan tax credits and exclusion of gift taxes relating to home acquisition loans, etc. Consumer options for home acquisition have also been broadened to facilitate the ownership of good-quality homes at an affordable financial burden. The release of information on used houses and home modeling has been augmented to help animate the home resale and remodeling market.

(2) Support for the supply of good-quality private rental housings, etc.

The construction, etc. of energy-efficient rental housings, etc. is being financed by the Japan Housing Finance Agency. To improve the quality of existing private rental housings and make effective use of vacant housings, the expenses incurred to remodel vacant rental housings (energy-efficient remodeling works, etc.) are subsidized for people in the low-income bracket, child-raising families and the like wishing to move into an existing private rental housing (Project for Promotion to Built Private Rental Housing Safety Net). Further, a housing change business for senior people, etc. is being implemented to promote the leasing their aged and therefore increasingly inconvenient detached houses to child-raising families, etc. that need larger housing room. This will not provide child-raising families with a larger living space for raising their children but guarantee a consistent house rent income for the elderly people, thereby promoting their change to a dwelling better suited to their senior life.

(3) Support for supply, etc. of public rental housings

While the burden of housing expenditure is rising as attested to by an expanding ratio of the amount of house rents to the amount of disposable income as pointed out in the preceding chapter, it would be necessary to assure those in need of housing care of a stable supply of housings by delivering public rental housings tailored to their needs and also facilitating their moving into private rental housing.

Municipal housing will be supplied fairly and precisely to those people in the low-income bracket who are unable to secure an appropriate level of housing on their own in the market. To ensure a supply of municipal housing tailored to local conditions, the Act on Public Housing was amended in 2012 to remove previous restrictions, such as the requirements for family members living together, allow singles, as well as than elderly people, to move in at the local governments' discretion. In addition, business entities offer incentives at their own discretion, such as an easing of requirements for income of tenants and prioritized occupancy.

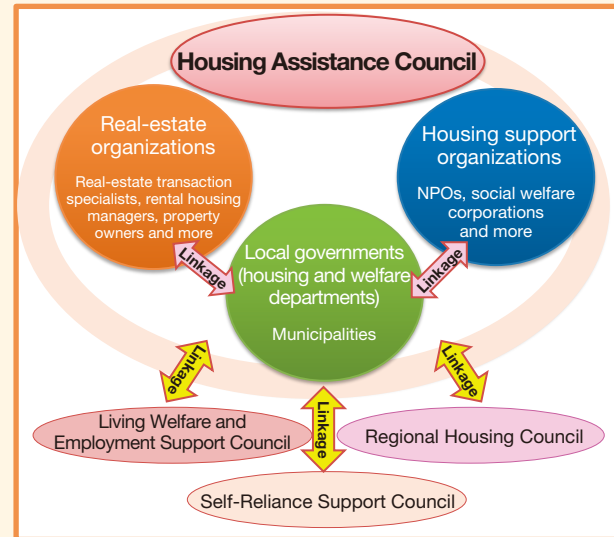
The Urban Renaissance Agency not only allows singles to move into its rental housings but also offers special benefits for child-raising families, etc., such as easing the lottery winning probability for moving into newly built rental housings to 20 times. The good quality local rental housing system furthers the supply of rental housings to child-raising families, etc. by subsidizing the maintenance and rent reduction expenses borne by local governments (about 180,000 houses managed at the end of FY2011).

In parallel with the large-scale reconstruction of public rental housing developments, child-raising support facilities are

being refurbished to reconstruct the residential facilities of the community as a whole and to enhance the convenience of daily living of child-raising families, etc.

Further, Housing Assistance Councils have been organized in a collaboration of local governments, real-estate agent organization, Housing Support organizations and the like to enable the low-income bracket, child-raising families, etc. and other individuals who need special housing care to facilitate their moving into private rental housings. The Councils, working in conjunction with the Project for Promotion to Built Private Rental Housing Safety Net, release information on available private rental housings. As of March 31, 2013, 32 Councils are in service (Graphic 225). The Kumamoto City Housing Assistance Council, founded in July 2011, for example, hosts a Website that disseminate information about rented housings, etc. (451 vacant houses registered in fiscal 2012) and also holds consultation meetings periodically to promote smooth moving into private rental housing.

Graphic 225 Scheme of the Housing Assistance Council



Source) MLIT

Column

Inducing Double-Income Child-Raising Couples into Citizenship - An Effort of Nagareyama City, Chiba Prefecture

A 20-to-25-minute train ride apart from the center of Tokyo, Nagareyama City, Chiba Prefecture (housing a population of 167,674 in March 1013) stages active promotional campaigns to grab residents. Prior to the opening of the Tsukuba Express train service in 2005, the city inaugurated a Marketing Office within a department in October 2003 and promoted it to the Marketing Department in April 2004 to develop a marketing technology that targets double-income child-raising couples in a bid to lure residents. It aims to enhance its public awareness and branded concept of a "town of the forest closest to central Tokyo" by putting PR ads through the media of TV, the newspaper, the Web and so on and hosting entertaining events inspired by green and forestry, such as "Marche' of the Forest," to augment the city's awareness and its branded image of being a "green town closet to central Tokyo."

The city's promotional activities are characterized by their focus on double-income child-raising couples, generally known as "DEWKS (double employed with kids)." The idea is to induce double-income couples having a high tax-bearing capacity to live in the city when the amount of inhabitant taxes accounts for about 50% of the city's tax revenues and personal inhabitant taxes command about 90% of the amount of the inhabitant taxes and encourage their children to live long after they grow up, thereby keeping up a circulation of generations to achieve sustainable pace growth for a housing city.

To help child-raising families live at ease, "Station-Front Pickup Nursery Stations" have been opened, for example, as one endeavor to clear up Wait-listed Children. According to this system, parents en route to their office send their children to a station-front station and let them bus to and from a specified nursery school in town. This makes it possible to send children to and from any nursery school with vacancies in town, thereby offering a powerful tool of clearing Wait-listed Children (57 children are on the Wait-listed Children on April 1, 2013).

As a result of these efforts, the population increased by about 12,000 from 2005, when Tsukuba Expressed launched, to 2012, with the most dominant age group changing from 60 to 64 years old to 35 to 39 years old.

In 2011, the city formulated the “Nagareyama City Sales Plan” to delineate the direction in the implementation of the promotional activities aimed at enhancing its branded image and compiled a menu of sample implementations of the activities. The City Sales Plan is committed to the goal of expanding the nonresident population of Nagareyama from about 200,000 in fiscal 2011 over a five-year period to about 1,000,000 by fiscal 2015 with a view to boosting its residential population.

PR ads



Source) Nagareyama City

Station-Front Pickup Nursery Stations

Nagareyama Otaka-no-Mori Station opened in 2007
Minami-Nagareyama Station opened in 2008

Pickup Nursery Stations are a system of interconnection of pickup nursery stations and specified nursery schools in town to bus children to and from the stations with both safety and confidence.



Column

Efforts Designed to Promote Youth Settlement

① Ama-cho, Shimane Prefecture

Located in Nakano-shima Island among the Oki Islands in the Japan Sea some 60 km off the coast of Shimane Peninsula in the Japan Sea, Ama-cho (housing 2,323 at the end of December 2012) pursues an active policy of promoting the settlement of new residents moving into the town in the so-called I-turn^{Note 1} since fiscal 2004 in the present context of shrinking population resulting in rapid paces of depopulation and falling birthrates. It hosts a Website and maintains a settlement department at its Tourist Association to answer inquiries and requests for inspection, offering residence to suit the family makeup and other conditions of the would-be settlers. In one ongoing effort, Ama-cho takes impetus from a general social capital improvement grant, etc. to build and remodel houses so as to give would-be settlers a hands-on experience with what it is like to live in the island and also renovate dwellings to promote settlement. A total of 97 houses were developed to encourage settlement from fiscal 2004 to fiscal 2012, with 361 new residents moving into the town in an I-turn, at a settlement ratio of 56%.^{Note 2} Of the new residents moving into the town in an I-turn, 102 in their 20s were the largest in number, followed by 89 in their 30s. Youths in their 20s to 30s account for more than half of the total number of settlers. Partly under the influence of the settlement ratio of the settlers making the I-turn in their 20s, the population of people in their 30s has been increasingly steadily since fiscal 2003,

Note 1 To move into a locality different from one's hometown (particularly, from an urban region into countryside and settle there).

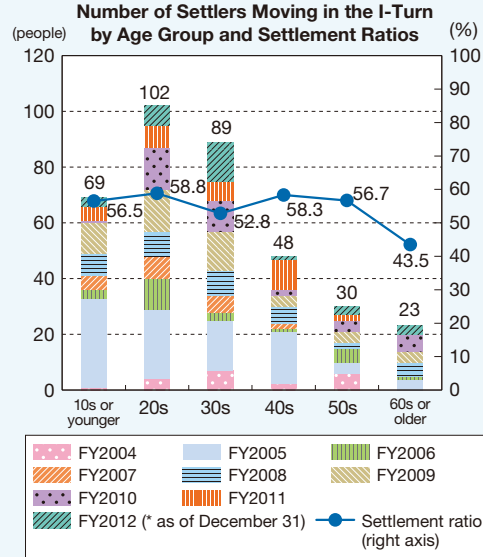
Note 2 The ratio of the number of settlers who moved into the island in the I-turn and who still live there to the total number of settlers in the same age group.

while the population of people in their 20s, once on the decrease to attend college or seek employment outside the island, has virtually moved sideways, suggesting that the scheme of housing construction and improvement geared at the specific conditions of youths, etc. may have yielded a certain settlement effect.

Settlement promotion house (3 rooms with living-dining room plus kitchen)



Source) Ama-cho



Source) Ama-cho

② Nishimera Village, Miyagi Prefecture

Nishimera Village (housing a population of 1,260 in March 2013), Miyagi Prefecture maintains settlement houses for singles who are 18 years of age or more but less than 40 years of age to promote the settlement of youths in underpopulated areas. Refurbished in 1996 and 1999, a total of 16 youth settlement houses are now available. Occupants up to the end of January 2013 totaled 80, and youths who moved into settlement houses to get acquainted with and marry to local residents counted 21 (17 couples) at the end of December 2012. By providing an opportunity for living and matchmaking for youth, these settlement houses have successfully promoted the settlement of youths.

Apartment house A



Construction time: 1996
Area per apartment: 47.85 m²

Apartment house B



Construction time: 1999
Area per apartment: 34.86 m²

Source) Nishimera Village

Section 4 Efforts Directed at the Way of Moving

Because Japan's tourism market is supported for the most part by the people taking tours by themselves, stirring their desire to take sightseeing tours would be essential to achieve sustained market growth. Youths tend to take fewer tours than as reported in the preceding chapter; the reason behind this may be that latent demand for travel has not been fully exploited, probably because youths are hardly motivated to set out on a tour without a full recognition of the value of travel, because the absence of traveling companions discourage them to take traveling action and so on. Considering the fact that the more often one has taken tours in the past, the more one is desirous of taking tours in the future, the present pace of fall in youth tourism could dampen the nation's traveling action in the long run. From viewpoints of maintaining and expanding Japan's tourism market both at present and in the future, giving travel experience to youths and so on, it would be necessary to promote youth travel.

① Efforts being made at the Youth Travel Promotion Workshop

The Youth Travel Promotion Workshop, consisting of representatives of industrial, academic and governmental circles, was set up and collected information about youth's travel trends and explored the approaches taken in other industries to grab youths in two phases of its activity, namely, in Phase 1 from July 2010 to June 2011, and Phase 2, from November 2011 to June 2012. The Workshop released its recommendations on the specific measures to be taken to promote youth travel in July of the same year (Graphic 226).

Graphic 226 Specific Measures to Combat to Promote Youth Travel

- <Recommendations>**
- 1) Different youth have as many different themes to capture themselves. Screen out and set defined themes to grab youths.
 - 2) Let youth find an added value in travels, such as self-investment and rare experiences.
 - 3) Exploit latent demand positively, as by emphasizing privileges available to parties of three or more.
 - 4) Promote travel goods at the non-travel Websites that are popular among youths to help acquire new customers.
 - 5) Feature an experience to have contact with locals as an element of travel.
 - 6) Take approaches that get down directly through to the travel needs of youths by working jointly with college seminars, NPOs and the like.

Source) MLIT

② Inauguration of an awarding system

The "Commissioner of the Japan Tourism Agency Award in Support of Youth Travels" was inaugurated in June 2012 to recognize the efforts of local governments, NPOs, enterprises, individuals and so on working to promote youth travels. A catchphrase that allures youths into an act of travel was publicly sought to publicize this awarding system. From among 267 applications, "No Better Time to Travel Than Now" was chosen in October 2012 (Graphic 227).

For the three-month public application period until February 2013, 61 applications were received and the winner will be awarded in June 2013.

Graphic 227 "Youth Travel" Logo Mark



Source) MLIT

③ Implementation of the “Youth ★ Class” program

Youths get into touch with a world previously unknown to them as they travel and, by so doing, broaden their field of vision to further their zest for living. In an effort to motivate and encourage youths to “hit the road,” a “Youth ★ Class” session was conducted for high-school students in February 2013 to impart the significance and joy of travel to them. The class was conducted to reflect the value of youths who tend to take particular heed of what their predecessors have to say when they decide to set out on a tour. Featuring Ms Haruka Itoh as a guest instructor who has won supporting companies to afford an around-the-world trip for no personal spending. The “Youth ★ Class” program will be carried out while mediating between the schools seeking to receive the class and the instructors.

Reference

Induced Living Space Levels (excerpt from the Promotion of Basic Plan on Housing (Cabinet decision made on March 15, 2011))

Induced living space levels prescribe the levels of housing space that are deemed necessary to address various lifestyles as a prerequisite to realizing an affluent housing life. Induced living space levels consist of general induced living space levels, which are assumed for residence in detached houses in the outlying suburban areas of a city and in general non-urban areas, and urban-residence induced living space levels, which are assumed for residence in apartment houses in the center of a city and in its outlying areas.

The areas of the respective living spaces (dedicated living areas, wall-center to wall-center dimensions) are specified on the assumption of meeting the basic functionality of the housing performance level defined in Exhibit 1^{Note}, as follows:

(1) General induced living space levels

① Singles: 55 m²

② Households housing two or more people: $25 \text{ m}^2 \times \text{Number of people per household} + 25 \text{ m}^2$

(2) Urban-residence induced living space levels

① Singles: 40 m²

② Households housing two or more people: $20 \text{ m}^2 \times \text{Number of people per household} + 15 \text{ m}^2$

Note 1 The number of people per household in the formulas above shall be calculated by counting a person less than three years of age as 0.25, a person who is three years of age or more but less than six years of age as 0.5 and a person who is six years of age or more but less than 10 years of age as 0.75. If the number of people per household thus calculated is less than two, it shall be counted as two.

2 If the number of people per household (if the condition of Note 1 above applies, the number of people per household as adjusted accordingly) is larger than four, the area requirements above shall be reduced by 5%.

3 In any of the following situations, the area requirements above may be overridden:

① A living space that allows for a relative short period of residence by single students, business bachelors or the like is maintained.

② A shared kitchen and bathroom of appropriate dimensions are available, each private room is furnished with a dedicated mini-kitchen, a water closet and a lavatory and the areas excluding the shared functionalities or facilities are maintained in the private room portion.

Note A prescription of the performance levels that serve as guidelines for the construction, etc. of living rooms and the formation of stocks of high-quality housings for common facilities. Exhibit 1 is not presented here because of space restrictions.

Part II

Trend in MLIT Policies

Chapter 1

Initiatives towards Recovery and Reconstruction from the Great Eastern Japan Earthquake

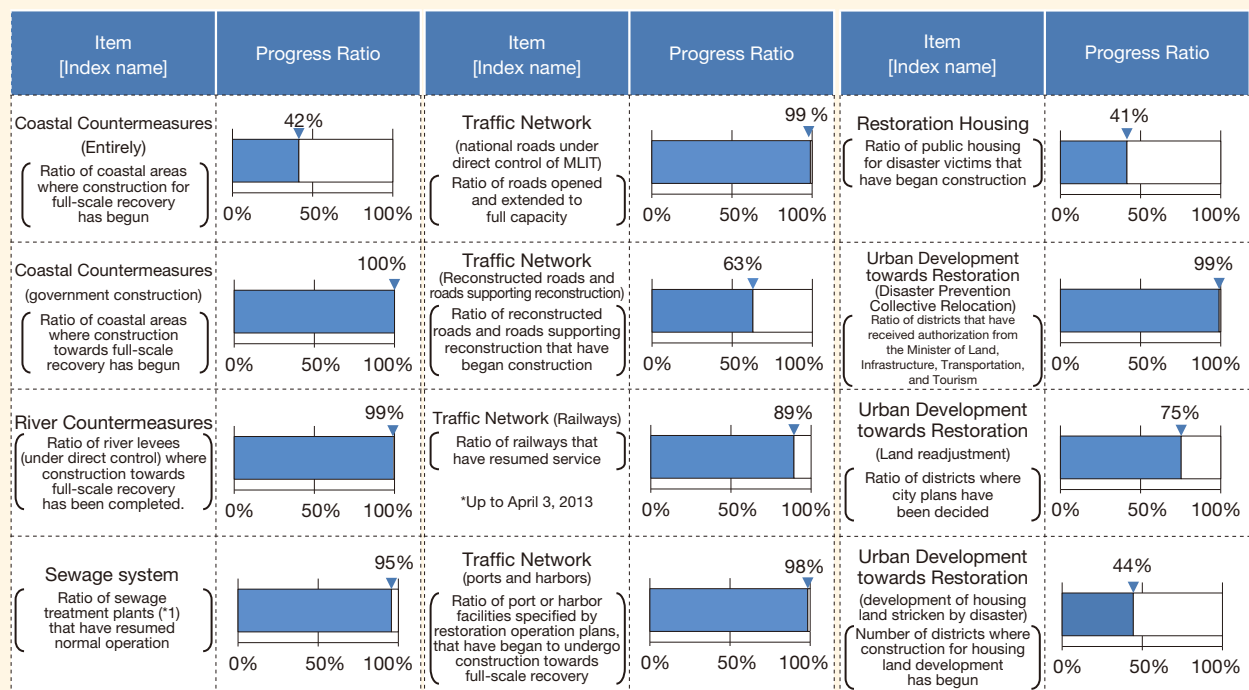
Section 1 The Current Status and Measures towards Relief and Recovery

Accelerating the recovery from the Great East Japan Earthquake is currently the most important task the MLIT currently faces. Although the number of refugees has decreased from the initial 470 thousand individuals at the time of the earthquake, around 310 thousand people^{Note 1} currently lead lives in evacuation in approximately 1,200 municipalities throughout 47 prefectures.^{Note 2} The MLIT is striving to achieve comprehensive efforts for the disaster victims as they actually feel the recovery.

Attentive to voices from areas affected by disaster, the MLIT works as united body to swiftly respond to on-site needs in each of the respective field of the Regional Development Bureau, the District Transport Bureau, the Japan Coastguard, and the Meteorological Agency. In order to achieve this goal, in January 2013 every 3 parliamentary secretaries were assigned a prefecture and set up as an “Affected Area Assistance Team” to respond to demands from each area affected by disaster.

Excluding some section where buildings have been completely washed away or those within the nuclear hazard evacuation zones, the emergency repair of infrastructures such as roads and ports has been promptly completed and efforts towards full-scale recovery are steadily underway. However, the relocation of buildings to higher grounds, the construction of public housing for disaster victims, housing reconstruction and other city development initiatives require further

Graphic II-1-1-1 Status of progress towards full-scale recovery and repair of public infrastructures



(Note) 1 "Sewage treatment plants that have resumed normal operation" refers to the treatment plants that have recovered the ability to process sewage to water quality equal to levels before the earthquake. This includes some sewage treatment facilities and sludge treatment facilities that are still under construction towards full-scale recovery.
 2 100% of airports have been restored.
 3 The progress ratios are those up to the end of March, 2013.
 Source) MLIT

Note 1 313,329 individuals up to March 15, 2013 from studies conducted by the Reconstruction Agency.

Note 2 Up to March 16, 2013 from studies conducted by the Reconstruction Agency

acceleration. Due to these reasons, in accord with the “Package of measures for the acceleration of the rebuilding of housing and town development” established in March of 2013 and based on the Roadmap for Reconstruction of Housing, measures aiming for further acceleration will be implemented in parallel with speeding up reconstruction projects. Obstacles respective to victim municipalities will be individually resolved.

Although there are numerous issues faced in executing the reconstruction schedule, such as the lack of technical experts and technicians, shortages in materials including liquid concrete and etc., difficulties in acquiring bidders for projects and obtaining land, various measures will be implemented to resolve such issues and reconstruction projects will be carried out swiftly and efficiently.

Section 2 The Steady Relief and Recovery of Infrastructures and Transportation

(1) Outline

Aside from areas where buildings have been completely washed away or those in radiation hazard zones, the recovery of various public facilities under the jurisdiction of the MLIT have been mostly completed midway through 2011. Currently, activities have transitioned from emergency recovery to full-scale recovery and reconstruction; carrying out operation in accord to the project plans and roadmaps we have been creating since 2011, the progress of reconstruction is steadily advancing. We will continue our endeavors now and in the future to achieve the full recovery of north-eastern Japan as soon as possible while staying mindful of requests from disaster stricken areas.

(2) Coastal Countermeasures

Of the areas under government construction (including the areas the government has undertaken disaster reconstruction) for the full-scale recovery of various sea embankments, the reconstruction for section having facilities vital to the relief and recovery of the Sendai Airport and areas with water treatment plants has been generally completed as of March 2013. For the sections remaining, we will sequentially proceed with reconstruction on adjacent portions of land, and strive to largely complete activities by March 2016. On that same date, we plan to roughly complete the reconstruction of breakwaters in bay entrances, which usually requires long periods of time, through careful planning in order to prevent major interference to urban development and industrial activities.

To the possible extent, while proceeding with construction, we are implementing structures that will tenaciously exert their capabilities even if they are struck by tsunamis. We also actively utilize recycled materials originating from disaster waste for embankment material in addition to staying wary of the surrounding landscape and natural environment during reconstruction.

(3) Countermeasures in Waterways

For countermeasures in waterways, aside from 2 of the sections that were inflicted with immense damages, we have completed the full-scale recovery of damaged embankments under government jurisdiction to safety levels (including for subsidence) equal to those before the earthquake. We will continue efforts while conforming to reconstruction plans formulated by municipalities in areas with the possibility of being struck by tsunamis and promote the elevation of embankments based on the 5 year Focused Reconstruction Period. As we aim to complete this project by 2015, we will progressively effectuate earthquake-resistant measures in embankments, liquefaction countermeasures, and the automation and remote operation of floodgates.

(4) Sewage System

Of the 120 treatment plants that were affected by disaster (excluding the 9 within the evacuation zone in Fukushima), 2 did not need to be operated due to there being no sewage produced. Besides the Sendai City Minami-gamo Purification Center, which suffered severe damages, the remaining 117 plants resumed normal levels of treatment by the end of 2012. In addition, of the 648km of damaged sewage pipes, 452km have been fully repaired as of end of 2012. We will continue efforts according to the reconstruction plans and aim for the prompt relief and recovery in parallel with implementing countermeasures towards earthquakes and tsunamis.

(5) Countermeasures against Sediment-related Disasters

The emergent measures to areas where landslides occurred were completed by the rainy season of 2012. Measures for areas raising concern for the possibility of inflicting immense damages to the traffic network vital to reconstruction are planned to be completed by the end of 2015.

(6) Roadways

① The reconstruction of highways, excluding those in hazard zones that were yet to undergo area inspection before 2012, has been completed. The sections of Joban Expressway falling inside hazard zone, yet to have undergone area inspection, are undergoing reconstruction in parallel with decontamination by the Ministry of Environment, striving to commence service by 2014 (excluding certain sections^{Note 1}). ② The reconstruction for national highways under the direct control of the MLIT have been generally completed at the end 2012 (furthermore, the large-scale disaster sites on Japan National Route 45 such as bridges, have been recovered in accord to Reconstruction Plans). ③ Of the reconstruction roads and roads supporting reconstruction, the sections that have newly undergone commercialization are receiving maintenance from the Reconstruction Project Acceleration PPP (public private partnership) by utilizing private technological skills. Among these, route 2 and 3 sections (Sanriku Expressway (between Utsu and Motoyoshi), Sanriku Expressway (between Miyako Chu-o and Taro), and Kamaishi Expressway (between Kamaishis and Kamaishi Nishi)) have gained local cooperation and the reconstruction projects has proceeded at unprecedented speeds. Construction was initiated within a year of newly establishing the project; construction was started in a total of 3 routes and 7 sections by the end of fiscal 2012.

(7) Railways

Of the railways that were damaged by the Great East Japan Earthquake, Sanriku Railway has begun reconstruction in 2011 by utilizing the new support system established in the third supplementary budget of the same year. On April 1, 2012, train operation recommenced between Tanohata and Rikuchu-Noda stations on the Kita Rias Line, while train operation between Yoshihama and Sakari stations on the Minami Rias Line is scheduled to recommence by April 3, 2013. The remaining sections are currently under reconstruction. All railways are expected to be fully operational by April 2014.

Train operation has also recommenced on the JR Ishinomaki Line between the Watanoha and Urashuku stations, and on the JR Joban Line between Hamayoshida and Watari stations on March 16, 2013. Furthermore, the start of reconstruction for lines between the Soma and Hamayoshida stations on the JR Joban Line in the spring of 2014 and the recommencement of train operation on all railways of the JR Senseki Line sometime in 2015 has been agreed upon between relevant officials. Moreover, in order to secure public transportation for the time being, the temporary recovery of transit is to be commenced on the JR Kesennuma Line, starting December 22, 2012, and the JR Ofunato Line, starting March 2, 2013 by BRT.^{Note 2}

As for the Yamada Line, Ofunato Line, and Kesennuma Line, having yet to have established recovery plans, of 6 damaged railways (Yamada Line, Ofunato Line, Kesennuma Line, Ishinomaki Line, Senseki Line, and Joban Line) deemed necessary to be reconstructed together linked with town development, tasks over reconstruction have been deliberated through the “Reconstruction Coordination Council” set up for each line, comprised of the relevant local governments, East Japan Railway Company, the Reconstruction Agency, and the MLIT Tohoku District Transport Bureau serving as secretariat.

(8) Ports and Harbors

In order to prevent regional deindustrialization and materialize the reconstruction of the community, recovery efforts are being systematically conducted based on the “Industry and Logistics Recovery Plan.” Industry and logistics aimed to be substantially recovered within 2 years time, especially the recovery of core facilities, have been largely carried out according to plan. Furthermore, the recovery of bay entrance embankments, which requires long periods of time, is being

Note 1 Section between Namie Highway Exit and Joban-Tomioka Highway Exit: The goal for service commencement is set to be abreast with the 2014 timeframe objective for commencing service.

Note 2 BRT stands for Bus Rapid Transit. It is a transportation system in which buses run on the dedicated lane or road free from traffic congestion and thus can be faster and more punctual than regular route buses.

progressed at a pace so it will be largely completed within 5 years after the earthquake as we concurrently hasten the reconstruction of the region by advancing the development of port industry and logistical functions, earthquake resistant wharves contributing to strengthening earthquake-resistant capabilities, and sea area waste disposal sites.

Meanwhile, the sea area waste disposal sites at the Sendaishiogama Port Ishinomaki Area and the Ibaraki Port Hitachinaka Area are developed in order to receive debris generated by the Great East Japan Earthquake. The reception of debris disposal has started in February 2013 at the Sendaishiogama Port Ishinomaki Area, and in July 2012 at the Ibaraki Port Hitachinaka Area.

Section 3 Promoting Reconstructive City Development and Securing the Stability in Residency

(1) Promoting Reconstructive City Development

In city development, we are working for smooth progress in reconstruction projects in accord to residential reconstruction plans (published in March of 2013), which incorporates the accommodating reviews over project techniques and project zones and ingenuities such as the stage based execution of reconstruction projects. Since the city development project required expertise and experience in forming consensus between relevant personnel and adjustments in matters concerning authority, and because projects are expected to be of unprecedented scale compared to past earthquake disasters, reconstruction projects require to be smoothly moved forward by supplementing the deficiencies in know-how and of personnel in municipalities. For these reasons, in addition to supporting the progress of projects by dispatching staff from local public organizations across the country, sending personnel to disaster affected local public organizations, implementing procurement methods for relieving the burden of procurement operations in disaster affected local public organizations, and utilizing the Urban Renaissance Agency, we also disseminate information through means such as by providing technical support through publishing and updating guidance information for the efficient execution of reconstruction projects, and also by posting the “Reconstructive City Development INDEX,” an online homepage compiling support initiatives.

As of March 2013, the plans executing the Disaster Prevention Group Relocation Promotion Project for migration to higher grounds have been approved for 325 districts (of the 328 expected to be subject to the plan) by the Minister. In addition, city development plans have been decided for 44 districts of the 59 expected to be subject to the land readjustment project.

(2) Securing Stability in Residency

Similar to city development, based on the residential reconstruction plan compiled of reconstruction schedules respective to district, we plan to swiftly secure the stability in residency through support projects mentioned below. For victims who are able to build or obtain housing by own means, interest rates were lowered for disaster recovery housing loans provided by the Japan Housing Finance Agency. Disaster recovery housing loans were also provided to victims who only suffered damages to their real-estate. Pre-existing loans were given up to 5 year extensions on payments and payment deadlines, as well as interest rates being lowered for loans amid payment.

Victims who face difficulties in building or obtaining housing by own available means are being provided public housing (public housing for disaster victims) by local public organizations. In addition to distributing grants for the cost of maintenance in these facilities and expenses from lowering rent for victims, we are devising special arrangements concerning the requirements for occupant qualification and cession of housing

Picture of public housing for disaster victims



(Source) Souma City, Fukushima Prefecture

Graphic II-1-3-1 Status of preparation for public housing for disaster victims (March 31, 2013)

Prefecture	Building sites	Design initiated	Construction initiated	Construction complete	Provision plan
Iwate prefecture	61 districts 2,500 number of units	45 districts 1,618 number of units	12 districts 433 number of units	4 districts 118 number of units	approx. 6,000 number of units (11 municipalities)
Miyagi prefecture	109 districts 6,062 number of units	83 districts 4,865 number of units	25 districts 1,138 number of units	3 districts 50 number of units	approx. 15,000 number of units (21 municipalities)
Fukushima prefecture	41 districts 2,230 number of units	32 districts 1,946 number of units	6 districts 124 number of units	4 districts 80 number of units	Overall project is yet to be decided

(Source) MLIT

facilities.

Moreover, in response to the Fukushima No. 1 Nuclear Power Plant Accident, we plan to secure the stability in residency for the refugees residing in evacuation zones by providing them the same accommodation as disaster victims such as moving into public housing for disaster victims.

Section 4 Securing Local Public Transportation and Promoting Tourism

(1) Securing Local Public Transportation

In matters concerning the local public transportation which suffered damages from the Great East Japan Earthquake, in order to support the securement and maintenance of bus traffic and share taxis in disaster affected areas, utilizing the scheme to secure, maintain and improve local public transportation systems, we are taking exceptional measures such as mitigating the assisting needs of similar projects. Specifically, these measures include the support for securing and maintaining the interregional mainline bus transportation networks as well as community bus transportation for daily commutation between evacuation shelters, temporary housing, remaining settlements or newly built housing, hospitals, shops and public agencies. The maximum limit for financial aid to community bus transportation is scheduled to be raised for certain conditions in 2012.

(2) Reviving Tourism

In order to revive travel demand in Japan as soon as possible, we implemented a promotional initiative for tourism in Japan consisting of disseminating information deliberately for overseas consumers. To revive tourism in the Tohoku and Northern Kanto regions in particular, sales negotiation meetings and promotional events for reviving tourism were held at 7 overseas markets for stimulating the creation of tourist products for Japan in overseas companies, and to actively raise appeal of tourist spots. Foreign media and tourism companies were also invited to the market events. In addition, we held a photo contest linked with SNS^{Note 1} called the “Share your WOW! –Japan Photo Contest” to convey the “safety, security and appeal” of Japan through opinions posted on the internet from tourists who have visited Japan and also by utilizing the “Safety and Security Brochure,” which is comprised of information concerning radiation for tourists visiting Japan, and the “Tohoku & North Kanto Tourism Guidebook,” which links with guidebooks from major overseas markets. Moreover, as a result of promoting various initiative for reviving the popularity of tourism in Japan, such as the promotion through advantaging large-scale international conferences such as the WTTC^{Note 2} and IMF World Economic Outlook, the number of visitors to Japan reached approximately 8.37 million people (35% increase in comparison to previous year and 3% less than year before last) in 2012.

In domestic tourism, though the number of lodgers is generally in steady recovery, lodging facilities focused on tourism still face difficult circumstances. According to the study on the number of vacation accommodation statistics conducted by the Japan Tourism Agency, the total number of visitors who stayed at lodging facilities (from July to September of 2012) in comparison to the year before last has decreased by 0.2% nationally, by 6.8% in the 6 Tohoku prefectures,^{Note 3} and by 0.4% in the Kanto region.^{Note 4} The total number of visitors who stayed at lodging facilities focused on tourism^{Note 5} (from July to September of 2012) in comparison to the year before last has decreased by 3.8% nationally, 21.9% in the Tohoku prefectures, and by 8.0% in the Kanto region, indicating that difficult conditions continue depending on region.

Although various initiatives are being implemented to revive the domestic travel demand, starting in March 2012, we have also begun to devise plans to rouse the popularity of the Tohoku region in particular. In addition to the sightseeing of existing tourist spots, public and private sectors are working in cooperation to conduct the “Tohoku Tourist Expo” around 30 core zones, portraying the entire Tohoku region as an exhibition hall. Under the theme of “Connecting Hearts, and Creating Encounters,” this project aims to change the style of tourism to “Long Stay, Cultural Experience,” where the theater of sightseeing is based on the daily life of the region such in local markets, farming and mountain communities,

Note 1 Social Networking Service

Note 2 World Tourism and Travel Council

Note 3 The 6 Tohoku prefectures include: Aomori, Iwate, Miyagi, Akita, Yamagata, and Fukushima

Note 4 Kanto region includes: Ibaraki, Tochigi, Gunma, Saitama, Chiba, Tokyo, Kanagawa, and Yamanashi

Note 5 Lodging facilities centered on tourism refers to facilities that responded to having 50% or more of all visitors staying for tourism purposes.

fishing villages, and settlements. Making full use of local history, culture and lifestyle, the exhibition focuses on the people who live in that region. Furthermore, starting March 2012, we have begun the full-scale promotion of the “Kanto & North Kanto Visiting Campaign” which supports the recovery of Kanto and the North Kanto regions through visitation. Aiming to expand the scale of solidarity, we are widely requesting the cooperation of local citizens by collecting and disseminating information on activities of endorsing organizations on the Japan Tourism Agency homepage.

Section 5 Ensuring the Smooth Execution of Reconstruction Projects

In the execution of recovery and reconstruction projects of disaster sites, we are faced with the task of attaining the smooth execution in light of the increasing number of projects failing to acquire contractors in competitive tender bids. To deal with such circumstances, the MLIT organized the “Liaison Council for Smooth Execution of Recovery and Reconstruction Projects” in December 2011 and held the “Reconstruction Acceleration Meeting” in March 2011 for discussion between state officials and relevant individuals of local public organizations from disaster affected areas. Through these activities, information on the current situations and views as to how to respond to them were exchanged, and it was confirmed that the parties would take necessary steps including securing human resources required for reconstruction, and development of proper integration values reflecting the actuality of price estimates of contracts. Concretely, we are proceeding to implement CPM^{Note 1} to speed up reconstructive city development and the Reconstruction JV System^{Note 2} for swiftly securing technical experts on larger scale for shorthanded disaster sites.

Section 6 Recovery, Reconstruction, and Etc. of Fukushima

After the occurrence of Tokyo Electric Power’s Fukushima No. 1 Nuclear Reactor disaster, refugees from the evacuation zones topped approximately 84 thousand individuals, while total number of refugees in the Fukushima prefecture, including self-imposed evacuees, climbed to approximately 154 thousand individuals (according to studies by the Reconstruction Agency). The government is faced with the need to hasten the recovery of infrastructures and services related to livelihood, the progress of decontamination work, and the maintenance in creating an environment desirable to return to. The MLIT strives to actualize the soonest possible return of those in evacuation through efforts such as reconstructing infrastructures, implementing measures for the toll-free use of expressways for refugees and overcoming harmful rumors in accord to the “Plan for Early Return and Settlement” and the “Package of Measures against the Effect of the Nuclear Disaster including the Reputational Damage from Harmful Rumors” established in March 2013.

Section 7 Developing Tsunami-resistant Communities learned from the Great East Japan Earthquake

Learned from the Great East Japan Earthquake, “Act concerning the Development of Tsunami Resistant Communities” was enacted and enforced in December of 2011. According to the principle of “Human life is most important,” this law promotes a development of tsunami-resistant communities based on the concept of multiple defenses which combines infrastructure development and other forms of measures targeting the largest class tsunami.

In 2012, the MLIT supported local governments by providing the technical advice related to the enforcement of the aforementioned law as well as guide concerning the assumptions of inundation by tsunami. The government also established consultation services and exchanged opinions with prefectures.

As a result, since August 2012, 5 prefectures, Ibaraki, Aomori (partial), Tokushima, Kochi and Miyazaki have set assumptions of inundation by tsunami targeting the largest scale tsunamis (up to March 2013).

Note 1 Construction Project Management: a method of which a construction manager (CMR) stands as the ordering party while sustaining neutrality in technical aspects takes partial or full responsibility over various management duties such as reviewing designs and construction order method, construction schedule control, quality control and cost management in each of the phases; designing, ordering, execution of construction.

Note 2 We are testing the implementation of a system where construction contractors from inside and outside the disaster sites work together as a consortium in order to secure technicians and skilled workers, who deficient in disaster affected areas, on a wide perspective while ensuring employment in a region, ultimately achieving smooth operation in recovery and reconstruction.

In addition, measures for reconstruction progressed in the areas struck by disaster through the utilization of this law. This included city plans such as the “Building Tsunami-resistant Urban District Facilities” decided in city planning for 9 districts including the Shizugawa district in Minamisanriku Town (up to March of 2013).

By maximum use of existing public and private facilities and relevant tsunami-resistant measures, the MLIT will actively put forward developing tsunami-resistant communities in order to protect the lives of citizens.

Chapter 2

Deploying Land, Infrastructure, Transport and Tourism Administration Tailored to Urges of the Times

Section 1 Combating Aging Social Infrastructures

Rapidly aging infrastructures developed during and after the nation's period of steep economic growth, such as Metropolitan Expressway No. 1 developed in 1964, project an accelerating proportion of those facilities that have been built for 50 years or longer over the 20 years to come. The ratio of the number of road bridges to the total number of bridges, for example, is predicted to rise sharply from about 16% in March in 2012 to around 40% in 10 years and about 65% in 20 years (Graphic. II-2-1-1, Graphic. II-2-1-2). A scheme of strategically maintaining, managing and renewing these aging infrastructures is now sought. To address this need, the Social Infrastructure Maintenance Strategy Subcommittee was formed under the Infrastructure Development Council and the Transport Policy Council in July 2012 to explore ways to maintain, manage and renew aging social infrastructures. At the same time, the Ministry of Land, Infrastructure, Transport and Tourism launched the Aging Social Infrastructure Countermeasures Council, headed by the Minister, in January 2013 in its full commitment to combat the issues of aging infrastructures and, after comprehensive and interdisciplinary discussions, worked out its general insight into a package of measures taken to combat the issues of aging infrastructures in the form of a progress schedule in March 2013 (Graphic. II-2-1-3).

The package begins by starting intensive checkups on aging infrastructures, for completion scheduled within one year, and implementing necessary repairs, etc. promptly after soul-searching on the Chuo Expressway Sasago Tunnel Accident in December 2012. To identify the current status of the individual facilities by making appropriate checkups to suit their characteristics and to implement precise repairs based on findings of the probe, the Ministry is working on the betterment of the maintenance and management standard for FY2013 and also constructing a database of maintenance and management information, etc.

Graphic II-2-1-1 Percentage Ratios of Social Infrastructures That Have Been Built for 50 Years or Longer

	March 2012	March 2022	March 2032
Road bridges (2 m or more in bridge length)	16%	40%	65%
Tunnels	18%	31%	47%
River management facilities (such as state-managed water gates)	24%	40%	62%
Sewer lines	2%	7%	23%
Harbor quays (4.5 m or more water-deep)	7%	29%	56%

※ Values are round numbers.
Source) MLIT

Graphic II-2-1-2 Aging Facilities

Examples of aging river management facilities



Pump facility impeller



Gate facility

Kuretsubo Road Bridge (concrete bridge) on Route 7, Yamagata Prefecture



1980 (15 years since construction): Cracks and rust fluid on the bottom face of the main girder



1991 (26 years): Ruptures in the main girder PC steel stock

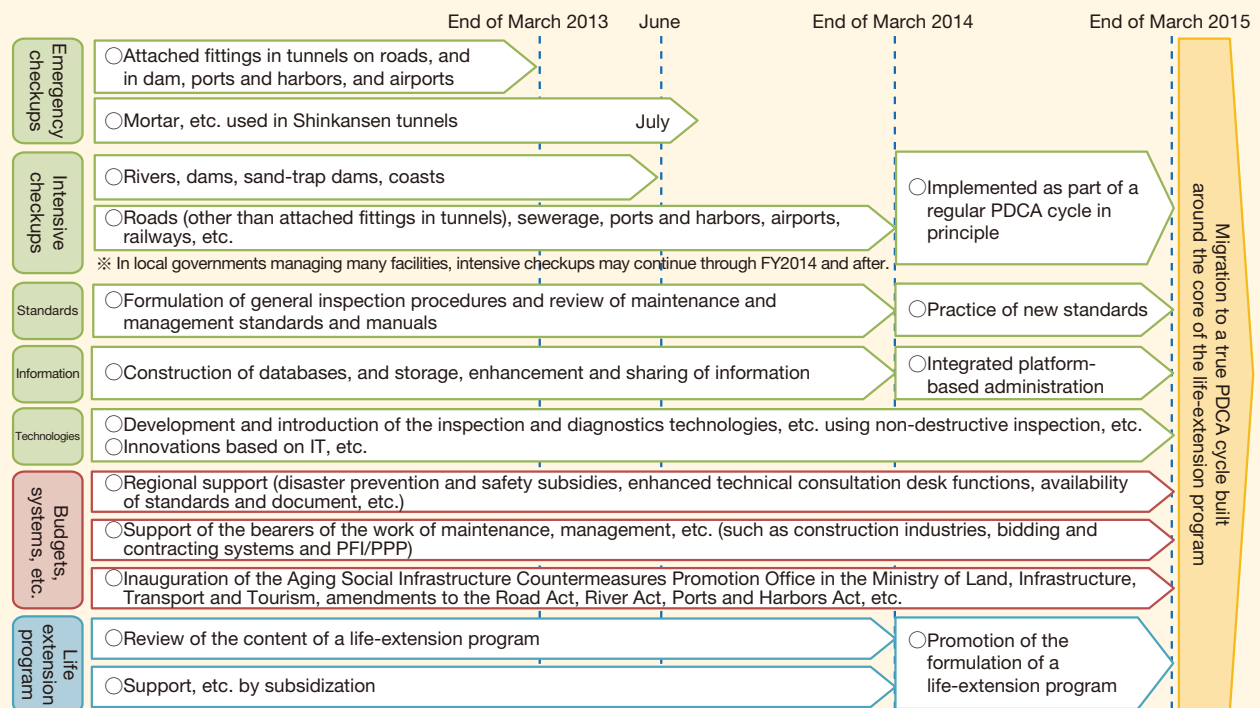


1991 (26 years): Two new columns erected to provide a load-bearing capacity

Source) MLIT

Graphic II-2-1-3

Process Schedule of the Measures to be Taken Immediately to Maintain, Manage and Renew Social Infrastructures, Decided on March 21, 2013



For more details, visit the Ministry of Land, Infrastructure, Transport and Tourism Website "Aging Social Infrastructure Countermeasures Council." (http://www.mlit.go.jp/sogoseisaku/point/sosei_point_mn_000003.html)
Source) MLIT

The non-destructive inspection and other technologies owned by private enterprises have been introduced into the field on a trial basis to help augment the simplicity, etc. of field maintenance and management workflow. Further, IT and other cutting-edge technologies tailored to specific maintenance and management needs are being actively implemented in the infrastructures to verify their usefulness. The resultant enhancement of the maintenance, management and renewal system (integrated hardware and software implementation of a next-generation infrastructure system) should help augment the safety, reliability and efficiency of infrastructure management, opening a way to forge a new marketplace and expand packaged infrastructure exports.

Institutional measures that support local governments at maintenance and management work as they care for a greater proportion of the infrastructures include releasing documentation to them and sponsoring sessions of training, etc., and granting disaster-prevention and safety subsidies to them as more proactive incentives. In parallel, the existing institutions, etc. are being reviewed and analyzed by supporting the development and training of bearers in the construction industries, partnering with communities and driving the maintenance, management and renewal of infrastructures through the use of PFI/PPP.

In addition to making these efforts, a PDCA cycle will be built on its full scale to combat aging infrastructures in FY2014 and after through the formulation, etc. of an enhanced service life extension program. To get infrastructure maintenance work on track to success, aging infrastructure countermeasures will be pursued on a priority basis with FY2013 being designated the "first year of infrastructure maintenance."

Column

Maintaining a Bridge Since the Edo Period

The five-span arc bridge, the Kintaikyo Bridge, erected in Iwakuni City, Yamaguchi Prefecture, was first built in 1673 by Hiroyoshi Kikkawa, the feudal lord of the Iwakuni Domain. Although it was washed away by a flood of the year following (1674), it was rebuilt within the same year. The bridge was never washed away for the following 276 years until it suffered damages from a typhoon in 1950.

Since the initial days of its reconstruction, the Kintaikyo Bridge has been rebuilt and periodically renovated; the girder bridges (two bridges at both ends of the Kintaikyo Bridge: the first and fifth spans of the bridge) have been rebuilt about every 40 years, the arch bridges (three spans in the middle: the second to fourth spans) about every 20 years, and the bridge plates and railings about every 15 years.

Chronological Table of Kintaikyo Bridge Reconstructions

Year (Year of completion)	Year	Description of construction work					Master carpenter and deputy carpenter
		First span	Second span	Third span	Fourth span	Fifth span	
	1673	○	○	○	○	○	Kuroemon Kodama, Yasuemon Saeki
2	1674	○	○	○	○	○	Kuroemon Kodama, Yasuemon Saeki, Hachiroemon Saeki
3	1683		○	○	○		Kuroemon Kodama, Yasuemon Saeki
7	1694	○				○	Kazaemon Oya
12	1699		○	○	○		Kazaemon Oya
16	1703	○				○	Kazaemon Oya
4	1714		○	○	○		Kazaemon Oya
2	1737	○				○	Rokuroemon Saeki
5	1740				○		Rokuroemon Saeki, Shichiemon Hosoya, Heiemon Saeki
	1741		○	○			Rokuroemon Saeki, Shichiemon Hosoya, Ikuemon Oya
	1744	○					Juemon Hasegawa, Ichiemon Oya, Seizaemon Oya
6	1756					○	Juemon Hasegawa
10	1760				○		Juemon Hasegawa, Jinbei Hara, Ikuemon Oya
13	1763	○					Kyubei Saeki, Mataemon Oya
	1764		○				Ichiemon Oya, Jinbei Hara
2	1765			○			Ichiemon Oya, Jinbei Hara
7	1778	○			○		Shirobe Oya, Ichizaemon Saeki, Bun'emon Hasegawa
8	1779		○				Genbei Hosoya, Seizaemon Oya, Bun'emon Hasegawa
2	1782			○			Ichiemon Oya, Seizaemon Oya
8	1796				○		Kyuemon Hara, Keinosuke Oya
	1801		○				Kyuemon Hara, Keizo Oya, Ubei Kodama
3	1806			○			Kyuemon Hara
8	1811				○	○	Kyuemon Hara, Keizo Oya
9	1826			○			Shichiemon Hosoya, Gonzaemon Oya, Seizaburo Saeki
10	1827		○				Gonzaemon Oya, Seizaburo Saeki, Denbei Hasegawa
11	1828				○		Gonzaemon Oya, Seizaburo Saeki, Seihachiro Oya
12	1841	○					Gonzaemon Oya
2	1845				○		Gonzaemon Oya, Nabejiro Oya
	1848			○			Nabejiro Oya, Shinaji Kodama
5	1858				○		Mataemon Oya, Shigeya Saeki
6	1859		○				Mataemon Oya
	1868			○			Uheiji Kodama, Seitaro Hara
4	1871				○		Totaro Oya, Uheiji Kodama, Seitaro Hara
28	1895			○			Shinsuke Uehara, Chukichi Tominaga
30	1897		○				Shinsuke Uehara, Chukichi Tominaga
31	1898				○	○	Shinsuke Uehara, Chukichi Tominaga
4	1929				○	○	Takitsuchi Hoshide, Seiji Fujimoto, Kumejiro Ebizaki
9	1934	○	○	○			Takitsuchi Hoshide, Seiji Fujimoto, Kumejiro Ebizaki
27	1952	○	○	○	○	○	Torakichi Katakura, Keiichi Shinohara, Kumejiro Ebizaki
14	2002			○			Kumeji Ebizaki (55 yrs), Masaichi Nakamura (43 yrs), Mutsuo Nakagawa (66 yrs)
15	2003				○	○	Kumeji Ebizaki, Masaichi Nakamura, Toshio Fujikane (41 yrs)
16	2004	○	○				Kumeji Ebizaki, Masaichi Nakamura, Kimihiko Okikawa (29 yrs)
Total		12	15	16	18	11	

※○ designates a bridge that was rebuilt.

※Old drawings have been left to date for the marked works.

Source) Iwakuni City, Yamaguchi Prefecture

To raise funds to cover the periodic reconstruction, etc. of the bridge, the following tax systems were in place:

- “Hashimoyai” (1675 to 1676) (in 1676, the expenditures payable for the preceding year as well were collected in a lump sum)

Funds necessary to rebuild and renovate the bridge would be raised from people of all classes in the domain (from samurai downward to farmers), with samurai donating one service unit per fief of approximately 1800 liters of rice and per resident.

- “Hashidashimai” (1678 to 1871)

An evolution of Hashimoyai, this tax system routinely collects money each year as an earmarked tax. Clansmen and people connected with temples and shrines were charged with approximately 1.4 liters of rice per fief of around approximately 1800 liters, plus another approximately 1.4 liters per residence. People living in rural districts were charged with approximately 1.4 liters of rice per household each year. Townspeople were charged with approximately 0.9 liters or approximately 0.67 liters of rice per frontage (1.8 m) each year.

Records say that the Iwakuni Domain, having a fief of approximately 1.08 million liters in 1703, had yearly collected a little more than approximately 17.5 thousand liters around 1847, which is worth about ¥48.5 million in present-day monetary terms.

The full-scale reconstruction of the bridge carried out between 1989 up to present has cost ¥2.6 billion.

Some of the expertise relevant to the reconstruction, etc. of the bridge that has been handed down since its initial construction depends on carpenters’ personal experiences. The art of “viewing timbers,” for example, has trickled down from seniors on site through generations because different timbers of the same kind can have different properties. The inheritance of carpentry lies behind the periodic reconstruction of the bridge to date.

Periodic reconstruction, etc. of the bridge is further on tap.



Second, Third and Fourth Bridge Span Rebuilding Drawing in 1699



(Source) Iwakuni City, Yamaguchi Prefecture
(Reference)
Kintai-kyo Bridge, Iwakuni City Official Website
<http://kintai-kyo.iwakuni-city.net/>

Section 2 Forming a New Phase of Relationships between the Central and Local Governments and Private Sector

1 New Phase of Relationships between the Central and Local Governments

Measures, etc. are being promoted on a nationwide scale or from nationwide perspectives in partnership with prefectures and municipalities to address the key tasks that are directly linked to people’s living, such as formation of an animated economic society and communities and assurance of safety and security.

In the circumstances, the Ministry of Land, Infrastructure, Transport and Tourism is tackling with the tasks of decentralization, such as reviewing the obligations and limitations to impose, transferring authority to local governments and reorganizing the programs to subsidize regional efforts.

In FY2012, the Act for the Development of Legislations to Promote Reforms for Augmenting Local Independence and Self-Sustenance (primary and secondary bill package) was enacted in accordance with recommendations by the Council for Decentralization Reform to permit the delegation of the public housing occupancy income and development standards and prefectural and municipal road structure standards to local ordinances and to broaden the scope of urban planning to

be developed by municipalities

In accordance with the abolition of Strategic Grant for Regional Autonomy, the subsidization program to support regional social infrastructure development has been restructured from a viewpoint of addressing policy issues through collaboration between central and local governments; in addition to existing Comprehensive Grant for Social Infrastructure Improvement, Comprehensive Grant for Disaster Prevention and Safety has been established, which provide intensive support to the efforts directed at restructuring infrastructures (measures for aging social infrastructure, disaster prevention and disaster mitigation) to preserve the lives and livelihood of local residents and securing safety in living spaces.

2 Driving Public-Private Partnership, etc.

The formation of a new scheme of PPP (Public-Private Partnership)/PFI and concrete proposals is promoted to develop, maintain and manage social infrastructures of real need by expanding the utilization of private funds under stringent financial conditions. Further, the preparation of PPP/PFI project proposals pertaining to the restoration of the areas stricken by the Great East Japan Earthquake is being propelled.

Proposals that had been filed as a means of driving the implementation of public-private partnership projects were compiled into agenda of deliberation to explore ways to utilize the system of management for public facilities, etc.

A total of 21 innovative public-private partnership support projects were adopted and feasibility studies, etc. were conducted with regard to the activation of Sendai Airport and regional development of the surrounding area with a view to utilizing the system of management for public facilities, etc.

A total of 14 earthquake disaster reconstruction public-private partnership support projects were adopted, with a reconstruction community renovation feasibility study, etc. being conducted in Rikuzen-Takata City, Iwate Prefecture under the leadership of a reconstruction community renovation company led by the private sector.

Restrictions being imposed from a viewpoint of securing national safety and security are reviewed as appropriate to address changes in the socio-economic climate precisely. A total of 22 preferential measures had been taken for Special Districts for Structural Reform and 216 Special Districts approved across the nation until the end of March 2013, such that restrictions on 14 preferential measures were reformed nationwide on the basis of records in the Special Districts.

Section 3 Driving the Implementation of National Land Policy

The implementation of a national land policy has been driven on the basis of the Fourth National Land Use Plan (national plan), which is committed to key principle of sustainable national land management, as well as a national spatial plan (national plan), which defines the “formation of a beautiful national land in which not only diverse global blocks grow in a self-sustaining manner but also living is easy” as a new vision of national land to guide the work of national spatial planning, and global regional plans, which summarize the regional strategy of each global block and the specific approaches it takes.

National spatial plans (national and global regional plans) are monitored each year to help enhance their usefulness as guidelines to the entities connected with the plans.

Further, since the implementation of a national plan needs to be driven by responding precisely to changes, etc in the socio-economic climate following the formulation of the plan, a policy review was compiled in FY2012 in accordance with the provision of Article 7, National Spatial Planning Act and Ministry of Land, Infrastructure, Transport and Tourism Post-Evaluation Implementation Plan.

As for global regional planning, since Recommendations for Building a Disaster-Immune National Land were worked out in July 2011, by the Committee on Building an Anti-Disaster National Land, an organ of the National Land Council, the Tohoku Region Global Regional Plan has been reviewed and other global regional plans have just been overhauled. These and other efforts to forge disaster-immune communities continue. The implementation of fully integrated national land policy will be carried on to reflect results of these efforts.

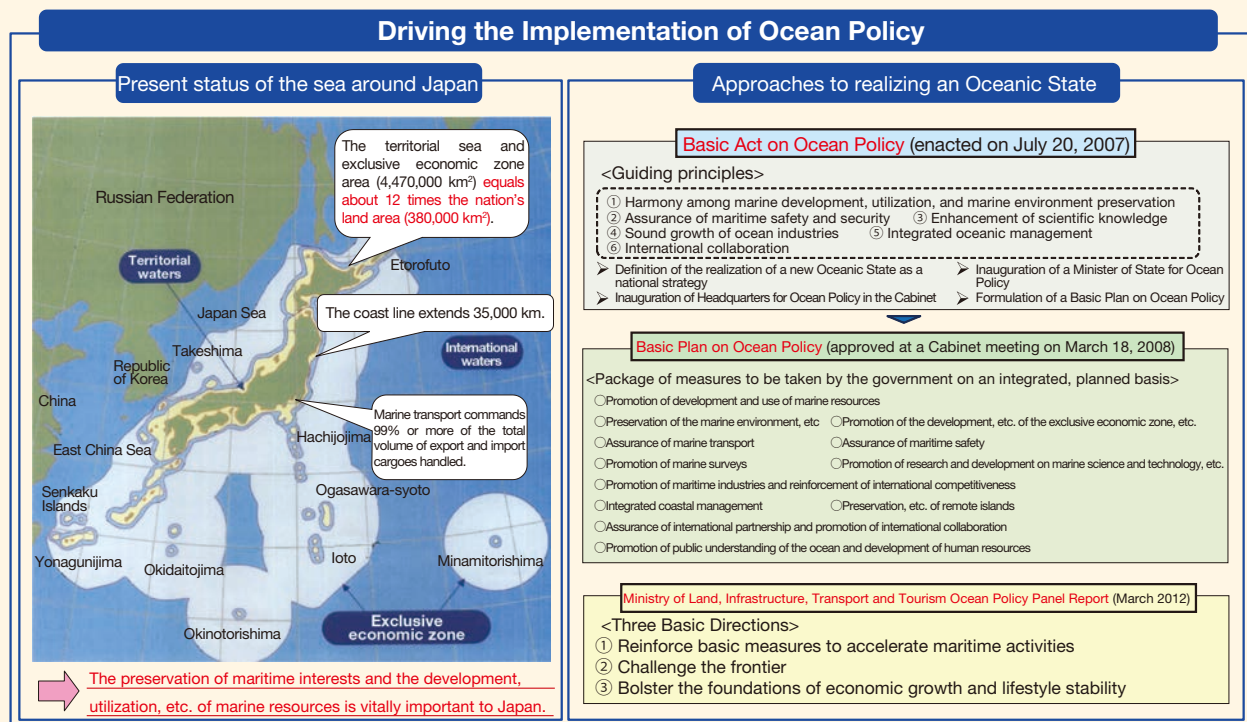
Section 4 Driving the Implementation of Ocean Policy (Oceanic State)

Surrounded on all four sides by the sea, Japan needs to grow into a true Oceanic State in recognition of the vast expanse of ocean as a frontier. Responsible for many fields of the nation's maritime administration, the Ministry of Land, Infrastructure, Transport and Tourism inaugurated the "Ministry of Land, Infrastructure, Transport and Tourism Ocean Policy Panel" to finalize the guiding principles and the directions of its ocean policy in March 2012, driving the implementation of the ocean policy in partnership with agencies concerned under the "Basic Plan on Ocean Policy" based on the "Basic Act on Ocean Policy."

The Ministry is also working on the preservation of the low-tide lines that justify the nation's economic exclusive zones, etc. and also on the development, etc. of working sites on remote islands pursuant to the "Act on the Preservation of Low-Water Line and the Development of Basic Infrastructure of Remote Islands for Maintaining and Promoting Utilization of the Exclusive Economic Zone and the Continental Shelf," which provides for the preservation and enhanced utilization of the exclusive economic zones, a key ground for developing such activities as exploiting and developing natural resources and preserving the marine environment, and associated basic plans.

The Ministry is also enhancing and reinforcing the system of maritime security to ensure safety and security at sea, promoting marine surveys from a viewpoint of preserving maritime interests in the seas under Japanese jurisdiction and developing an environment to encourage the full-scale utilization of the sea through integrated maritime information. It also promotes the popularity of power generation based on renewable ocean energies and strategic fostering of maritime industries in its continuing bid to drive the implementation of ocean policy.

Graphic II-2-4-1 Driving the Implementation of Ocean Policy



Source) MLIT

Section 5 Efficient and Prioritized Deployment of Measures

1 Driving the Implementation of the Third Priority Plan for Social Infrastructure Development

Priority Plans for Social Infrastructure Development are formulated to drive the efficient and prioritized implementation

of social infrastructure development projects in accordance with the “Act on Priority Plan for Social Infrastructure Development.”

The Third Priority Plan for Social Infrastructure Development was approved at a Cabinet meeting held in August 2012 to target the period from FY2012 to FY2016. The Plan presents a perspective of what Japan’s medium-to-long-term social infrastructure development should be to address various challenges, such as harsh financial conditions and proceeds to set forth four priority goals based on the standard of “selection and concentration” - mitigation of large-scale or broad-based disaster risks, reinforcement of the nation’s industrial and economic foundations and international competitiveness, realization of a sustainable and vital national land and regional development and precise maintenance, management and renewal of social infrastructures and suggests indices that demonstrate the benefits of social infrastructure development to the nation in an intelligible manner.

The Plan dictates thorough coordination not only between hardware measures but also between hardware and software measures, between various implementers and between projects and the hardware and software measures.

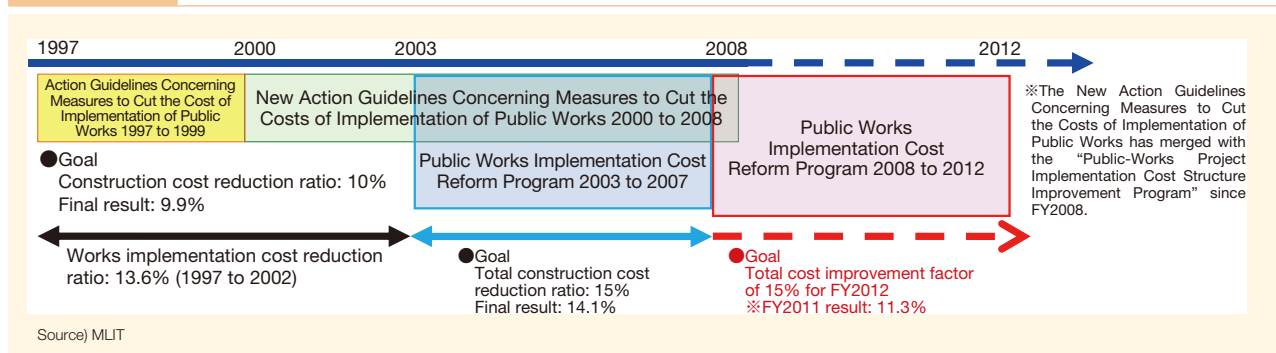
2 Driving the Improvement of the Total Cost Structure of the Implementation of Public-Works Projects

The whole government is working to improve the total cost structure of the Implementation of public works in the present context of harsh financial conditions based on the “Ministry of Land, Infrastructure, Transport and Tourism Public-Works Project Cost Structure Improvement Program” formulated in March 2008. In addition to following the course of action already taken, the Program values the maximization of VFM^{Note 1} and sets a total cost improvement factor to assess the following kinds of improvement:

- ① Improvement of the social cost structure, such as lightened environmental loads;
- ② Improvement of the life-cycle cost of longer-lived facilities; and
- ③ Improvement of the cost structure derived from technological innovations in the private sector.

Committed to boosting the total cost improvement factor by 15% in five years over its FY2007 level, the Program achieved a total cost improvement factor of 11.3% for the Ministry of Land, Infrastructure, Transport and Tourism and associated agencies, etc. in FY2011.

Graphic II-2-5-1 Progress of Cost Structure Improvement Efforts to Date



3 Ensuring the Quality of Public Works and Promoting Proper Tendering and Contracting for Public Works

Pursuant to the “Act for the Quality of Public Works,” the Ministry of Land, Infrastructure, Transport and Tourism enforces the total evaluation bidding method^{Note 2} in its implementation of all the public works to assure their better quality in principle and has also introduced the method on a full scale into construction consulting and similar fields. Measures, such as the total evaluation bidding method based on construction system confirmation and special priority surveys, are taken to prevent the taking of dumping orders, which are feared to interfere with quality assurance and cause a squeeze

Note 1 Value for Money: To provide a service of the highest value for investment throughout the lifetime of the implementation of public-works projects, from inception and planning to maintenance and management.

Note 2 The method of determining a successful bidder by making a comprehensive assessment of costing with additional elements.

on subcontractors. Other ongoing efforts include the promotion of information sharing between purchasers and contractors through the transmission of design philosophy from the designer to the constructor to assure the quality of work objects and in-process inspections on a trial basis to confirm the status of construction through the entire sequence of construction processes.

In August 2011, amendments to the “Guidelines on the Measures Taken to Promote Proper Tendering and Contracting for Public Works” were approved at a Cabinet meeting to fuel further improvement of the tendering and contracting system, ushering in the “Regional Maintenance Type Contracting Method” as a new method of contracting to help acquire supporters of regional maintenance projects (disaster recovery, snow clearance and infrastructure maintenance and management projects) and to encourage the central and local governments, etc. to leverage diverse methods of ordering, such as blanket ordering to cover both design and construction and construction-managed ordering.^{Note}

General competitive bidding was implemented in about 95.6% of the works carried out by the Ministry of Land, Infrastructure, Transport and Tourism during FY2011, with about 99.1% of the works adhering to the total evaluation bidding method (all by value). The policy of procurement that provides an excellent mix of pricing and quality continues into FY2012 and after. As a solution to the problems with the total evaluation bidding method, such as increased workload, etc. on both purchasers and contestants in fulfilling their paperwork procedures relating to the preparation and review of technical proposals, suggested improvement on the total evaluation method, such as simplifying it to polarize between two versions, i.e., one evaluating construction capabilities and the other evaluating technical proposals, have been tried with a view to their full-scale application. Local governments have been urged to toughen their countermeasures against dumping, such as reviewing the reference prices for verifying low bid prices and to review the scheme of prior announcement of predetermined prices to drive the normalization of tendering and contracting.

Section 6 Driving the Implementation of Transport Policy

Transport means the spatial movement of human beings or materials. Transport has enriched and enhanced the knowledge, expertise, etc. that make up a culture through human and material exchanges, contributing to the prosperity of humankind. In this sense, transport should mean more than a mere means for human beings but it can be thought of as a source of vitality needed by people to live a cultural, future-centric creative life in their lives as human beings.

Transport policy has now come to a major turning point amid rapid changes in the socio-economic climate, such as dwindling population with falling birthrates and growing urges to combat global warming and also to build a disaster-immune national land and communities particularly in the wake of the Great East Japan Earthquake. Among the evolving challenges for transport, for example, reinforcing the networks of international and arterial traffic that supports the recovery of the national economy and maintaining the substitutability and multiplicity of the networks to provide against natural disasters has become an issue of pressing concern. Regional public transport, in the mean time, is jeopardized as it is increasingly difficult to maintain. Assuring regional public transport is sought to sustain and animate communities.

In the circumstances, a legislation is being explored as a framework of driving the implementation of transport policy through collaboration and partnership among various stakeholders concerned.

Section 7 Policy Evaluations, Project Evaluations and Interactive Administration

1 Driving Policy Evaluations

Based on the “Ministry of Land, Infrastructure, Transport and Tourism Basic Plan for Policy Evaluations,” the three schemes of policy evaluation, namely, policy assessments (Project Evaluation Method), policy checkups (Performance Evaluation Method) and policy reviews (Comprehensive Evaluation Method) are defined as a tool of achieving the following three goals:

Note Construction management method, whereby a construction manager (CMR) represents a purchaser while staying technically neutral to review designs and the method of placing orders for construction works in the design, ordering and construction stages and to undertake various management activities, such as process management, quality control and cost management in whole or in part.

- ① Realization of efficient and high-quality nation-oriented administration;
- ② Promotion of performance-centric administration; and
- ③ Thorough perfection of accountability to the nation.

At the same time, policy evaluations have been conducted for individual public-works projects, individual research and development issues, regulations and special taxation measures to suit policy characteristics. Policy reviews of nine themes were conducted in March 2012 and policy checkups were carried out with regard to 13 policy goals using 44 measure goals and 213 performance indices in September of the same year. In the light of the directions of policy improvement highlighted by these evaluations, policy assessments were conducted for 33 new measures in February 2013 to interchange FY2012 supplementary budget and FY2013 budget requests.^{Note 1}

2 Implementation of Project Evaluations

A fully integrated scheme of evaluating individual public-works projects is built in place to enhance the efficiency and transparency of their implementation. Under this scheme, new public-works projects are evaluated upon initial adoption and then reevaluated and post-evaluated upon completion. Evaluation results, including cost-effectiveness back data on new adoption, reevaluation and post-evaluation, are compiled into project evaluation charts to help confirm their background, which are posted on the Internet or the like.^{Note 2}

The Ministry of Land, Infrastructure, Transport and Tourism also conducts its own planning stage evaluation for new products under its direct supervision in preparation for their evaluation upon initial adoption.

3 Driving Administrative Management Open to the Nation and Interactive Administration

(1) Land, Infrastructure, Transport Hotline Station

In driving the land, infrastructure, transport and tourism administration that has a close bearing on people's lives, it is important to gain a broad insight into the views, requests and other voices of the people and deploy administrative measures that are directly linked to the people. To this end, the Land, Infrastructure, Transport Hotline Station is open, collecting about 1,000 views on the average.

(2) Releasing information to consumers, etc.

In addition to the traditional schemes of administrative guidance, the "Negative Information Search Page" is available from the Ministry of Land, Infrastructure, Transport and Tourism Website, which contains a summary history of the administrative penalties imposed on the business operators in the past in connection with buildings, such as houses, and public transportation facilities, to ensure safety and security through proper selection by consumers and market supervision.

(3) Making the process of social infrastructure development program formulation more transparent

Driving the implementation of a social infrastructure development plan calls for winning understanding and cooperation from local residents to ensure transparency and fairness from its stage of inception afterwards. Comprehensive studies have been made from various perspectives, such as social, economical and environmental, to encourage the participation of various entities, including local residents and also guidelines that set forth basic concepts of the reasonable formulation of plans are extensively used to add to further transparency.

Note 1 Ministry of Land, Infrastructure, Transport and Tourism Policy Evaluation Website
<http://www.mlit.go.jp/seisakutokatsu/hyouka/index.html>

Note 2 Project Evaluation Website
<http://www.mlit.go.jp/tec/hyouka/public/index.html>
 Project Evaluation Chart
<http://www.mlit.go.jp/tec/hyouka/public/jghks/chart.htm>

Chapter 3

Realizing a Tourism Nation and Forming a Beautiful Country

Section 1 Trends in Tourism

1 Significance of a Tourism Nation

Tourism not only means much to national economic growth, such as stirring regional economies and creating more employment opportunities, but helps deepen mutual understanding globally. The realization of tourism nation, therefore, is one of the foremost issues of the nation's growth strategy.

2 Current Picture of Tourism

(1) Trends in national tourism

Japanese travelers who took domestic stay-over sightseeing tours in 2011 stayed 2.08 nights on the average, spending a total of about 15.1 trillion yen, inclusive of both homecoming and business trips, down from 2010 (staying 2.09 nights and spending about 15.8 trillion yen). Japanese spending for overseas travel in 2011, on the other hand, stood at about 4.5 trillion yen, moving essentially crabwise from its year earlier level (about 4.7 trillion yen).

The number of overseas travelers in 2012 advanced to about 18.49 million, up 8.8% (about 1.5 million) over its last-year level.

(2) Trends in foreign tourists visiting Japan

The number of foreign tourists visiting Japan in 2012 rose to about 8.37 million (up 35% from a year earlier but down 3% from the year before), the second largest figure next to a record high of about 8.61 million attained in 2010, attesting to a virtual recovery of the market from the aftermath of the Great East Japan Earthquake, etc.

By market segment, China, Taiwan, Thailand, Malaysia, Indonesia, Vietnam and India posted a record high each. By nationality and region, Korea ranked the first with about 2.04 million tourists (up 23% from a year earlier but down 16% from the year before), followed by Taiwan with about 1.47 million (up 48% from a year earlier and up 16% from the year before) and China with about 1.43 million (up 37% from a year earlier and up 1% from the year before)

Spending by foreign tourists visiting Japan rose to about 1,861 billion yen in 2012, an advance of about 35.5% (about 272.6 billion yen from its year earlier level).

(3) Trends in the tourist industry

① Travel agencies

In FY2011, major 58 travel agencies posted a business volume of about 6,490 billion yen, down 0.5% from FY2010.

Overseas tours stood at about 2,234.5 billion yen, up 2% from their year earlier level, when compared with domestic tours at about 3,767 billion yen, down 1.4%. Inbound foreign tourists dropped 25.3% from their year earlier level to settle at about 47.3 billion yen.

② Hotels and inns

In FY2011, major registered hotels had a room occupancy rate of 67.8% (down 4.5% from its last-year level), against 57.8% for Japanese inns (down 2.1%). Of the total number of major registered hotels and inns, hotels in the positive figure are 47.9% (up 2.9% from the last-year level) and inns 43.3% (up 0.4% from the last-level level).

Section 2 Approaches to Realizing Tourism Nation

Amid varying recent circumstances around tourism, “the Tourism Nation Promotion Basic Plan” was approved at a Cabinet meeting on March 30, 2012 to advance the national economy further, consolidate and even better the national life, deepen mutual understanding globally and facilitate restoration from the Great East Japan Earthquake. Pursuant to this plan, measures designed to realize a tourism nation have been put into energetic action in an integrated, planned fashion. The Tourism Nation Promotion Headquarters works to strengthen inter-agency coordination and collaboration to propel an integrated, consistent governmental effort.

Further, the “Japan Tourism Agency Commissioner Award” is granted to recognize those individuals and organizations that have made significant contributions to the promotion and growth of tourism. So far, 34 individuals and organizations have received this award.

1 Forming a Highly Competitive and Charming Tourism area

(1) Promoting stay-and-exchange type tourism

Tourism areas are working together under the “Act on Promotion of Tourists’ Visit and Stay Through Development of Tourism Areas” to promote the development of tourism areas that address the needs of stay-and-exchange type tourism, in which foreign and domestic tourists stay two nights and three days or longer. FY2012, 49 tourism area development plans had been accredited. In addition, endeavors to plan and sell tourist stay programs, development of relevant human resources and so on are supported with a view to forming “Tourist Area Development Platforms,” or business bodies that serve as a channel of contact between market and region.

Further, “Tourism Area Development Practice Plans” have been accredited, which provide packages of government-controlled projects and measures to support the endeavors to develop regions centering on tourism. The Plans not only support social infrastructures development and other efforts designed to accelerate the development of tourism areas but get the stakeholders connected with tourism and social infrastructures development together in each tourism area to promote an exchange of opinions concerning field surveys preparatory to social infrastructures development, specific approaches and so on. Field surveys had been conducted in 19 tourism areas by March 2013.

In addition, amendments to the “Basic Policy on Promotion of Tourists’ Visit and Stay through Development of Tourism Areas” have been put into effect since March 2013 to promote stay-and-exchange type tourism.

(2) Enhancing the foreign tourist reception environment

To accomplish the “Get 30 Million Foreign Tourists” program, which projects to increase the number of foreign tourists visiting Japan to 30 million in the future, improving the foreign tourist reception environment at home, as well as staging campaigns on the overseas markets, has become a task of urgent concern. In FY2012, a foreign tourist reception environment improvement project was implemented in 35 of the 45 regions nationwide that have been selected to be a regional point of strategic significance each. The purposes of the project was to encourage foreign tourists to visit these regions by creating an environment in which foreign tourists can move, stay and go sightseeing with both an ease of mind and with comfort and to gain an expanding population of repeat visitors by augmenting their satisfaction. The project not only helped improve the self-reliant foreign tourist reception environment in these regions and proliferate the environment in other regions by itself, but also accelerated its improvement by sending foreign students staying in Japan to tourist sites and having them come up with suggested improvements on the underdeveloped areas of the reception environment from a foreigner’s viewpoint.

In addition, a foreign tourist information office accreditation program was launched to upgrade foreign tourist information offices for greater tourist convenience and satisfaction. During FY2012, 342 foreign tourist information offices nationwide were accredited to form a network of foreign tourist information offices in place. Moreover, taking lessons from the Great East Japan Earthquake, a scheme of passing correct information to foreign tourists promptly via a Website has been built to keep them at ease in times of emergencies, such as natural disasters.

To address the diversified needs of foreign tourists visiting Japan more precisely, actions have been taken to better the Licensed Guide-Interpreters System by sponsoring programs to enhance the quality of Licensed Guide-Interpreters, such as training sessions designed to augment their expertise, as well as pursuing steady implementation of the preferential

measures to authorize paid guidance by people other than Licensed Guide-Interpreters based on the “Comprehensive Special Zones Act.”

In the meantime, hotels and inns that are suited for lodging by foreign tourists visiting Japan in both terms of hardware and software have been accredited pursuant to the provisions of the “Act on Development of Hotels for Inbound Tourists.” As of the end of December 2012, 1,015 hotels and 1,650 inns are registered.

2 Promoting Visits to Japan in an All-Japan Bid

To boost the number of foreign visitors to Japan to 18 million by 2016, the charms of Japanese tourism are being disseminated overseas and the Visit Japan Project is deployed to lure more foreign tourists into Japan.

Staged in Korea, China, Taiwan, Hong Kong, Thailand, Singapore, Malaysia, Australia, the U.S., Canada, the U.K., France, Germany and elsewhere, the Project includes

- ① Taking actions targeting overseas travel agencies, such as inviting staff of overseas travel agencies and putting tour ads jointly with them.
- ② Taking actions targeting overseas consumers, such as putting ads abroad and inviting overseas media representatives.
- ③ Taking actions in a global partnership between communities and the Transport Bureau to attract foreign tourists.
- ④ Encouraging foreign tourists traveling Japan in an All Japan bid by partnering with ministries and agencies concerned, including diplomatic establishments abroad, and private enterprises.

3 Fortifying International Competitiveness in the Fields of MICE, such as International Conventions and Conference

Promoting the attraction and sponsorship of MICE^{Note} is positioned as a prime force for economic impetus and also as an infrastructure, because it is instrumental in broad areas, such as:

- ① Economic repercussions
- ② Evolving business opportunities and innovations
- ③ Enhanced urban competitiveness and brand power

While competitive Asian nations, out of their recognition of the importance of MICE and the expanding market potentials, are stepping up their efforts to grab MICE opportunities to threaten a proportionate decline in Japan’s international competitiveness. Specific efforts have been made to promote the attraction and sponsorship of MICE and build up Japan’s international competitiveness, such as conducting promotional campaigns abroad. These efforts include participating in the trade fairs held in European, U.S. and Asian regions to consolidate the public awareness of Japan’s MICE brand and inviting MICE magazine reporters to strengthen the market exploitation. Further, the MICE International Competitiveness Enhancement Committee was sponsored in November 2012 to provide a drastic boost to Japan’s approaches, including sophistication of its MICE marketing strategy. In addition, studies were conducted to broaden the population of MICE human resources in Japan, develop human resources capable of leading Japan’s MICE industry in the future and gain an insight into the actual conditions of MICE in an effort to maintain the environment for accepting MICE.

According to International Congress and Convention Association (ICCA) statistics, Japan hosted 233 occasions of international congresses and conventions during 2011, the 13th largest in the world and the second in Asia.

Note “MICE” is an acronym that represents a form of business travel, meaning Meeting held by a company, etc., Incentive (travel), international Convention or Conference and Exhibition.

4 Driving a Holiday Reform

The Japan Tourism Agency is accelerating the holiday taking mood in a bid to create travel demand. During FY2012, the “Create Family Time Project” was implemented at 120 schools in 15 regions nationwide (when compared with 98 schools in 10 regions during FY2011). The community-based project encourages corporate employees to take paid holidays and also schedules school holiday periods to allow the employees and their children to enjoy coordinated holidays together.

Further, the “Positive Off” movement has been promoted to encourage employees to take a positive stance towards taking day-offs to enjoy outing, travel, etc., on vacation. This movement is aimed at conditioning a workplace environment to facilitate holiday taking and help boost the economy through outing, travel, etc. on vacation, thereby building a work-life balance or a holiday-enjoying lifestyle. It is advocated and driven jointly with the Cabinet Office, the Ministry of Health, Labour and Welfare and the Ministry of Economy, Trade and Industry.

5 Reinforcing the Tourist Industry and Developing Human Resources Who Help Promote Tourism

(1) Reinforcing the tourist industry

To realize a tourism nation and let tourism provide a new impetus to Japan’s economic growth, reinforcing the tourist industry would be essential. To this end, specific measures are being explored to develop the nation’s tourist industry at a higher level of refinement and win high evaluations from the customers and stakeholders at home and abroad, thereby consolidating a branded image of the nation’s tourist industry for further growth.

(2) Developing human resources who help promote tourism

① Promoting a policy of collaboration among the government, industry and academia

Activities aimed at developing managerial human resources who will support the tourist industry have been promoted with collaboration among the government, industry and academia. In addition, the Internship Model project has been implemented to secure excellent human resources to work for the tourist industry while arousing public interest in the industry, encouraging employment in the industry and improving their basic capabilities as members of society.

② Supporting approaches to developing human resources working on tourism area creation

To accelerate approaches to developing human resources to work on the voluntary, independent creation of regional tourism areas, measures and techniques for human resources development tailored to specific regional conditions have been worked out, tried, escalated and deployed nationwide.

③ Promoting tourism nation education

Tourism nation education has been promoted to nourish a “traveling mind” within children to let them grow to support future regional development.

6 Keeping Sightseeing Tours Safer

In the wake of an express bus accident that occurred on the Kanetsu Expressway in April 2012, intensive on-site inspections poured into the travel agencies that operate express buses, and emergency measures were taken, including a review of the Travel Agency Act system.

With the subsequent occurrence of a climbing tour accident that occurred in the vicinity of the Great Wall of China in November of the same year, the safety measures for climbing tours were reviewed and on-site inspections were toughened.

7 Maintaining an Environment to Accelerate Sightseeing Tours

(1) Promoting the tourism based on the universal design concept

To consolidate and promote the widespread acceptance of the concept of universal tourism, which makes tourism safely available to anybody, including aged and physically handicapped people, host environments have been refurbished and ways to promote partnerships, etc. among stakeholders, such as regional support bodies and travel agencies.

(2) Promoting new tourism

New breeds of tourism (eco-tourism, green tourism, cultural sightseeing, industrial sightseeing, healthy tourism, sport tourism and more) are being brewed to fulfill diversified traveler needs while taking advantage of regional characteristics. As for sport tourism, the Japan Sport Tourism Alliance (JSTA) was founded in April 2012 as a core body to help inaugurate regional sport commissions, attract and sponsor international sport events and more.

8 Maintaining Tourism Statistics

The maintenance and utilization of various kinds of tourism statistics is being stepped up to aid in the strategic planning of tourism policy and verification of its results.

Since FY2012, full-scale tourist resort economic surveys have been conducted on about 100,000 business establishments across the nation in conjunction with an economic census to elucidate the basic structure of the tourist industry (number of business operators, sales volume, employment and working conditions) and advantageous effects of tourism that may stimulate regional economies. Efforts are also being directed at trimming the time spent on the publication of other areas of tourism statistics and introducing the methods of analyzing such statistics actively to offer data that useful to the administrative authorities and industries as they plan their own policies on a timely basis.

Section 3 Building a Beautiful Country, as by Forming a Good Landscape

1 Forming a Good Landscape

(1) Promoting activities pursuant to the three landscape laws

Activities aimed at forming good landscapes are being promoted as the number of landscape administrative organizations^{Note} operating under the Landscape Act increased to 568 as of January 1, 2013, with landscape plans having been formulated by 360 of them. The “Outdoor Advertisement Act” has also been amended to enforce a system of registration for outdoor advertising agencies. Further, the enactment of outdoor advertisement ordinances by municipalities which are landscape administrative organizations is in progress (by April 1, 2012, ordinances had been worked by 50 bodies). The Greening Area System based on the “Urban Green Space Conservation Act” has also penetrated Nagoya City, Yokohama City, Setagaya-ward, Tokyo, and Toyota City, Aichi Prefecture to propel good landscape formation and easy-to-live-in town development.

(2) Working on landscape reviews in refurbishing social infrastructures

Diverse opinions collected from among local residents, academic experts and so on and post-project landscape prediction and assessments are factored into projects on the drawing board to proceed with the tasks of refurbishing landscape-conscious social infrastructures.

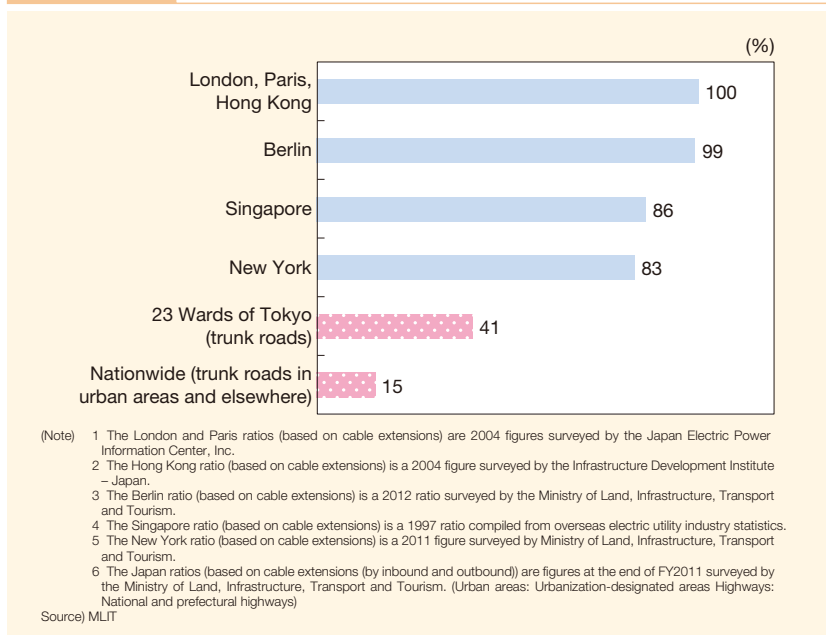
Note Prefectures, government-ordinance-designated cities, regional hub cities or those municipalities that fulfill landscape administration duties (as provided for in Sections 1 to 4, Chapter 2, Chapter 4 and Chapter 5 of the Landscape Act) subject to prior consultation with prefectural governors.

(3) Promoting utility-pole-free town development

Utility-pole-free town development along non-trunk, as well as trunk, roads has been promoted in collaboration with the local residents, utility pole administrators and so on to form a good landscape, promote tourism, secure a safe and comfortable passage space, make roads more disaster-prepared and so on while seeking ways to cut costs.

Graphic II-3-3-1

Present Status of Utility-Pole-Free Town Development in Major European and U.S. Cities and Japan



(4) Promoting “Scenic Byway Japan”

The “Scenic Byway Japan” campaign has been promoted, with various entities working in collaboration, to form scenic beauty built around the nation’s byways by taking advantage of regional resources. As of the end of March 2013, a total of 130 routes are registered as Scenic Byways in support of the activities that make for the formation of beautiful landscapes and the enhancement of regional charms.

(5) Promoting the development of waterfront spaces, etc.

To facilitate the use of rivers as an immediately accessible natural space for anybody, river development projects designed to enhance public affinity to the waterside, the scenery and other characteristics of rivers have been promoted, including the “Neo-Natural River Reconstruction” project, the “River Town Development” support program, the “Projects for Waterfront Schools for Fun” campaign.

In addition, the development of purling brooks utilizing spaces in public sewerage storm sewers, etc. and the facilities designed to use treated sewage water as purling water has been promoted to create and renovate waterfronts by utilizing sewerage facility spaces and treated sewer as purling water. Wastewater treatment is also properly carried out to create and preserve a good water environment.

2 Community Development Taking Advantage of Nature, History and Culture

(1) Preservation, utilization, etc. of Japan’s cultural properties by designation as National Government Park

The development of National Government Parks to preserve and utilize Japan’s cultural properties is being promoted. A total of 17 National Government Parks, including Asuka Historical National Government Park and Nara Palace Site Historical Park are already open. During FY2012, the Forest of the Ancient in Yoshinogari Historical Park was developed.

(2) Preservation of Historic Landscape in Ancient Capital

Based on the Act on Special Measures Concerning the Preservation of Historic Landscape in Ancient Capitals (“Ancient Capitals Preservation Act”), the historic landscape of the ancient capitals, such as Kyoto, Nara and Kamakura, has been preserved by regulating acts such as new construction, enlargement, remodeling of a building and alterations to the

existing landform, and also by conducting the ancient capitals preservation such as purchasing the ownership of the land, and awareness-raising of ancient capitals preservation.

(3) Preserving and utilizing public buildings of historical value, etc.

To make for regional town development, efforts that help create a new forum of exchange, as by positioning a historical sabo facility and the surrounding environment as a core of regional tourist resources and refurbishing the whole environment, as well as promoting the preservation and utilization of time-honored government facilities that have been loved for long by the locals, have been promoted.

Historical sabo facility protecting a region

Ushibuse River mainstream channel designated as an Important Cultural Property (Nagano Prefecture)



Source) MLIT

(4) Promoting urban development to take advantage of history and culture

To promote urban development that takes advantage of regional histories and traditional cultures, historic scenery maintenance and improvement district plans in 35 municipalities (as of March 31, 2013) have been accredited pursuant to the “Act on Maintenance and Improvement of Historic Landscape in a Community (Historical Urban Development Law)” to support activities adhering to the plans. In addition, empirical reviews and surveys have been conducted in 15 regions nationwide to solve issues of common concern in the formation of historical landscape.

Chapter 4

Promoting Regional Revitalization

Section 1 Approaches to Regional Revitalization

The government recognizes regional revitalization as a key issue and pursues a policy of achieving regional revitalization from cross-ministerial and cross-measure perspectives under a scheme of integrated governance (Integrated Headquarters for Regional Revitalization).

As part of this policy, an international conference on the “FutureCity” initiative was held in Tokyo in February 2012. The initiative was globally promoted at the meeting of Rio+20^{Note} held in June of the same year.

According to the comprehensive special zone program, 44 special zones have been specified and deliberations on exceptions to the governing regulations to help these special zones fulfill their own endeavors are in progress. With the special zone for structural reform program, exceptions to the regulations, such as simplifying the procedural flow of seeking permissions relevant to small hydropower generation under the “Rivers Act,” have been introduced to suit regional characteristics. Further, a special zone renovation system has been inaugurated to help resolve key issues of common concern to the different parts of the nation, such as responding to an aging population with falling birthrates. The selection of additional “Environmental Model Cities” has also been commenced to proceed with the goal of low-carbon city development.

Because more of the local residents’ voices need to be heeded in promoting the endeavors for regional revitalization, the governmental system of consultation has been molded into a one-stop sequence to follow up the endeavors for regional renovation in a fully integrated flow for each regional block.

The Ministry of Land, Infrastructure, Transport and Tourism promotes the implementation of comprehensive and strategic transport policies, such as revitalizing and renovating the means of regional public transport, such as local railways, buses and sea routes to remote islands and improving on transport nodes, supports original and ingenious local endeavors, such as revitalizing central urban areas, renovating cities, migrating to an intensive urban structure and promoting tourism and encourages construction industries by promoting contracting at fair prices and supporting the growth of integrated regional industries with a view to realizing a regional economic society offering the ease of living with buoyancy and vitality.

For regions or elsewhere where the population is rapidly shrinking or aged, the Ministry works to help develop a community in which living is made easy from the local residents’ standpoints, by supporting the work of community development activities undertaken by various entities, including NPOs, securing the availability of vital day-to-day living services, such as medical care and shopping, by revitalizing the village functions and consolidating the means of daily regional transport by supporting the introduction of community bus services.

Regarding the issues of urban reconstruction, the MLIT pursues to:

- ① Promote urban reconstruction projects, as by developing international airports and disaster prevention centers;
- ② Promote urban development by private sectors pursuant to the “Act on Special Measures concerning Urban Reconstruction”; and
- ③ Promote nationwide urban reconstruction based on the urban reconstruction and development plans, etc. prepared by municipalities.

The “Act on Special Measures concerning Urban Reconstruction” was amended in April 2012 to launch a system of urban reconstruction safety assurance planning in April 2012 and the “Basic Policy for Urban Reconstruction” was revised in August of the same year, both to assure safety in times of large-scale earthquakes.

Note United Nations Conference on Sustainable Development (Rio+20)

Section 2 Promoting Measures Supporting Regional Revitalization

1 Efforts Directed at Augment Regional and Private Autonomy and Discretion

(1) Expanding and improving on administration on various subsidies

The “Regional Renovation Infrastructures Reinforcement Subsidies” are a cross-ministerial package of subsidies that are granted to help develop functionally similar facilities in clusters in accordance with a regional renovation plan. The package comprises the “Road Development Subsidy” (municipal roads, wide-area agricultural roads or forest roads), the “Sewage Treatment Facility Development Subsidy” (public sewerage, village drainage or septic tanks) and the “Harbor Development Subsidy” (local harbor facilities or Category 1 or 2 fishing port facilities). As of the end of March 2013, 1,607 regional renovation plans were accredited. The “Regional Renovation Infrastructures Reinforcement Subsidies” are used to finance facilities development in the projects based on 1,003 of these regional renovation plans.

(2) Supporting local regional revitalization efforts

An enhanced system of consultation on local regional revitalization efforts in progress is maintained by delegating regional revitalization support teams, consisting of private experts, etc., and sponsoring consultation meetings at the Local Branch Offices. To further ongoing local efforts for individualistic, attractive community development, the “Tedukuri-Furusato-Sho Award”^{Note 1} has been inaugurated. In addition, information that aids in community development, such as case studies and ministerial measures, is disseminated^{Note 2} in an email magazine or on other media to support regional revitalization endeavors.

(3) Promoting the use of know-how and funds originating from private sectors

To bolster the growth and competitiveness of local cities, the MLIT supports the implementation of those private urban development projects that are pursued in coordination with the urban reconstruction development projects sponsored by local governments and that are accredited by the MLIT, as well as urban planning funding to finance Town Development efforts by local residents, etc.

The MLIT supports the formulation of Town Development plans to be driven in the initiative of private Town Development leaders and the implementation of experimental endeavors designed to realize and consolidate the concept of sustainable Town Development, with local citizen participation, through the maintenance and improvement of the charms and vitalities of towns, including events held in public spaces, such as parks, and outdoor advertising projects.

Further, the MLIT promotes the openness of road spaces to develop and manage infrastructures with a new form of partnership between the public and private sectors funded by profits derived from the private sectors and to create new business chances that leverage urban road spaces. Since the introduction of a special measure in FY2011 regarding the permission to use road spaces for creating forums of festivities and human interaction, the nation’s first permanently open

Example of a Private Urban Development Project Accredited by the Minister of Land, Infrastructure, Transport and Tourism
Himi City Himi Banya-Gai (Himi Lodging House Street) and Spa Development Project

Food culture dissemination facilities and spa-based facilities developed and run by Himi Town Development Co., Ltd. on the subjects of “food and health” attract customers from broad regions, including the neighboring and three major metropolitan areas, to create a space of festivity.



Source) MLIT

Note 1 The Minister of Land, Infrastructure, Transport and Tourism award system that recognizes the social infrastructures that help create regional charms or individualities and the associated regional activities as a unit.

Note 2 Regional Planning Information System - Repis:<http://www.mlit.go.jp/sogoseisaku/region/chiiki-joho/index.html>

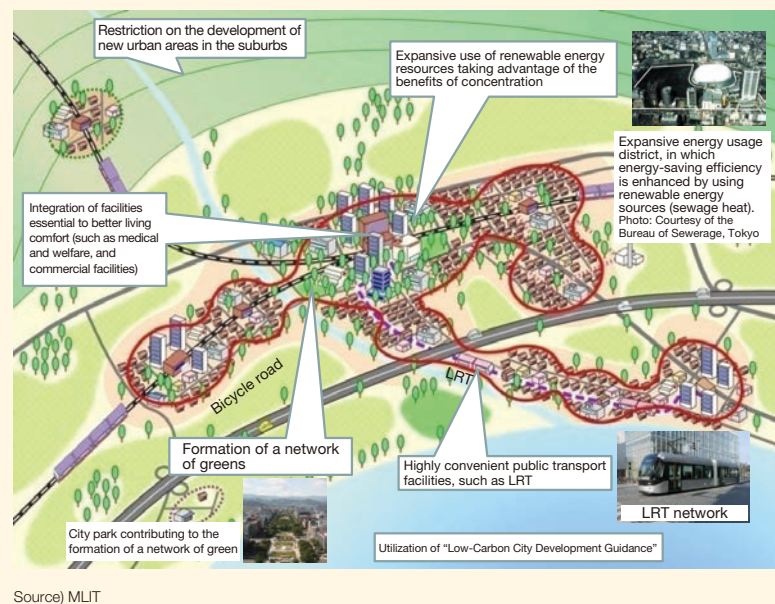
street café has been opened in Shinjuku-ku, Tokyo. Other Town Development efforts are also in progress in other parts of Japan with partnership between the public and private sectors. PFI project procedures have been launched to allow private entrepreneurs to maintain, manage and run directly the parking spaces owned by the MLIT in pursuit of better user convenience, less costs of administration and management.

2 General Endeavors to Realize an Intensive Urban Structure

As the population declines and gets aged, the importance of realizing an intensive urban structure emerges to address the issues of the global environment, simplify urban management and so on. This task should call for concentrating vital urban livelihood facilities, such as medical, nursery, welfare, educational and cultural, in central urban districts and around transport nodes to augment the convenience of public transport and to maintain opportunities of diverse forms of concentration, festivity and human interaction. An intensive urban structure would allow access to services from anywhere in the city and further the creation of new industries or more jobs. Additional benefits might include promoting “Town Development with living in a walking sphere,” which depends on walking on foot, bicycles and public transport, and abating environmental loads through the more efficient use of energies, etc. taking advantage of the concentration.

The MLIT supports regional and urban Town Development by diverse approaches, including promoting Comprehensive Transport Strategy. That call for increased use of public transport facilities, better transport nodes and the development of a bicycle use environment and an animated pedestrian space, promoting urban area development strategies, such as forming intensive urban centers, as by city center revitalization and encouraging town residence and restricting the development of new urban areas, utilizing natural and untapped energy sources, developing city parks and forming networks of greens as by preserving and creating green spaces and greening public facilities, etc.

Graphic II-4-2-1 Schematic of an Intensive Urban Structure



Further, the “Low Carbon City Act” was enacted in December 2012. This legislation introduced a system of certification of buildings designed to facilitate low carbonization in urban areas or elsewhere, plus a “system of low-carbon city plan,” which encourages municipalities to work out plans that make for low-carbon urban development. These two systems are expected to drive “compact city plan” as a partnership among administrative authorities, citizens and private entrepreneurs.

3 Urban Planning and Infrastructures Development Taking Advantage of Regional Characteristics

(1) Emergency development of urban planning roads instrumental in encouraging private investment

The development of urban planning roads is significantly instrumental in facilitating urban renewal because it encourages the reconstruction, etc. of roadside buildings. For those routes under construction whose completion is bottlenecked because of only a small lot of land yet to be purchased, the local governments (project implementing entities) announce their pledges to complete the construction within a certain period of time (completion time declaration routes; as of April 1, 2012, 439 routes were declared by 126 project implementing entities) to speed up the development of the project benefits.

(2) Developing transport nodes

Transport nodes, such as railway stations and bus terminals, hold a high degree of convenience and potentials as a core of urban reconstruction, because they attract numerous people to use the various kinds of transport facilities that converge on them.

The MLIT leverages the implementation of transport node improvement projects, urban and regional transport strategy promotion projects, General Improvement of Railway Stations

and so on at the transport nodes, such as the Shinjuku St. South Exit District, and in the surrounding areas to improve the ease with which passengers transfer from one means of transport to another, to consolidate the urban areas disrupted by railways, etc., to improve the station functions and so on and thus to streamline urban traffic and build up the functions of these transport nodes.

Further, the MLIT subsidizes the implementation of the Station-Town Partnership Project in progress in the Sannomiya Station Front South District (Kobe City), a projects based on a comprehensive plan formulated by a conference composed of local governments, railway operators and so on to keep the progress moving efficiently. The project, coupled with a station facility use facilitation project for Hansin Sannomiya Station, aims to renovate the station area in an integrated fashion.

The MLIT also encourages upgrading of the station facilities as a general core of safe and comfortable regional living, as by building child-support and medical facilities in the premises of existing railway stations, from viewpoints of regional concentration by bringing medicine, work and living into closer vicinities.

(3) Wide-area development of infrastructures to induce firm location

Competition, collaboration and regional buoyancy in East Asia should benefit greatly by inviting and accumulating internationally competitive growing industries in the individual regions. Motivated by this recognition, measures have been promoted to support expanding regional employment and more buoyant economy by concentrating investment on the development of those infrastructures that are truly needed to carry out unique regional approaches, such as developing airports, ports and harbors, railways and wide-area expressway networks.

① Enhanced airport facilities

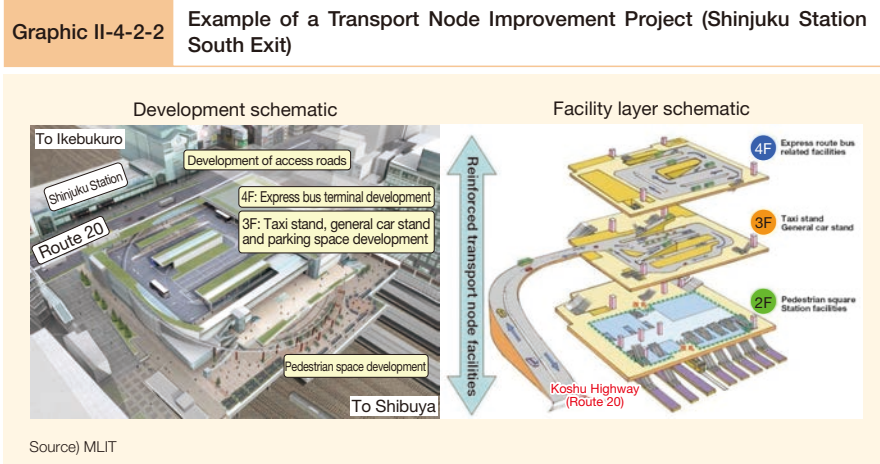
Air networks that interconnect remote locations at home and abroad are greatly instrumental in revitalizing regions by promoting regional tourism and corporate economic activities. Especially, as the economy goes on global in recent years in the context of a growing division of international labor, air transport assumes increasing importance for its speediness. In line with this trend, efforts to enhance airport facilities by improving terminal areas, such as aprons, are in progress.

② Port and harbor development

In an increasingly tight global climate for resources, energies and so on, Japan finds it urgently imperative to realize more stable, less costly imports because the nation depends on imports for virtually all of its requirements for these. The MLIT is committed to reinforcing the nation's industrial competitiveness, creating more employment and curbing the outward flow of revenues by realizing stable, less costly imports through the development of core port and harbor facilities to accommodate larger vessels and formation of efficient national marine transport networks through accelerated business-to-business partnerships.

③ Railway development

The nationwide network of trunk railways is the lifeblood of passenger and freight transport, accelerating interaction between blocks and between regions, encouraging industrial location and activating regional economies to energize regional living. Rail freight transport, in particular, plays a dominant role in moving industrial commodities, etc. that



support regional economies.

④ Road development

About 80% of the newly built plants are located within 10 km from an expressway interchange from viewpoints of simplified logistic flow, ready access to distribution and so on. The formation of a new network of trunk highways, such as arterial high-standard highways and regional high-standard highways, is being promoted to strengthen international competitiveness and to further regional dependence and industrial growth, as by speeding and facilitating logistics.

(4) Promoting community-conscious projects and programs

① Michi-no-eki (Roadside Station)

Located roadside, Michi-no-eki are a facility that combines a mix of roadside amenities, including parking spaces and restrooms, a source of information, including highway and regional information, and a forum of regional partnership, which encourages interaction between a region and users of the roads in that region and between regions. As of March 2013, 1,005 Michi-no-eki are registered. Michi-no-eki (Roadside Stations) which serve as a center to defend against disasters are also in place as a center of restoration activity or evacuation.

② Promoting river Town Development

The MLIT supports and promotes the implementation of municipal and other plans to use rivers and the waterside as a core of Town Development and tourism and boost the regional charms from both perspectives of hardware, such as waterside space development integrated with a scheme of Town Development, and software, such as deregulations.

③ Managing rivers with resident participation to suit regional characteristics

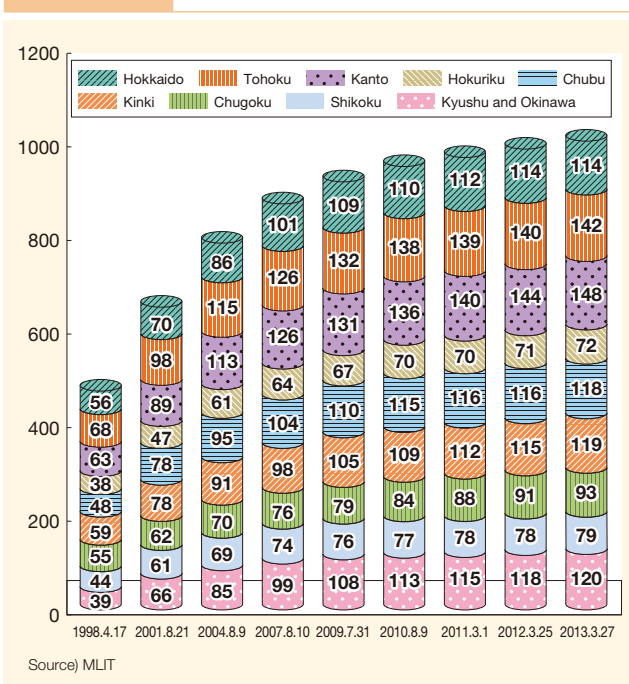
Those individuals who possess an expert knowledge of river environments and who are zealous for the idea of affluent river development are appointed “river environment preservation monitors” to help create and preserve river environments and carry out meticulous activities aimed at ensuring and promoting orderly river usage. River environment preservation monitors are also at work, collecting information about river management, such as locating cases of illegal garbage dumping into rivers and detecting flaws in the river facilities, and promoting the philosophy of river preservation.

Furthermore, the Love River Campaign has been promoted, whereby riverbeds are made open as flowerbeds, etc. to groups of volunteers and local residents who offer to clean, mow and otherwise care for the rivers, thereby forming a community-rooted familiar waterside space. As an example of river management with resident participation, the work of cleaning, mowing and taking care of a specific length of a river is carried out jointly by the local residents, local government and river administrator working in concert under an agreement concluded with the residents.

④ Supporting efforts to take advantage of the regional features of the seaside

The implementation of seaside environment development projects, which formulate seaside usage revitalization plans and develop seaside preservation facilities according to those plans, are supported by granting General Social Infrastructures Development Subsidies to them to revitalize the usage of the seaside and add to its charms as a tourist resource.

Graphic II-4-2-3 Changes in the Number of Michi-no-eki Registered



⑤ Regional promotion built around ports

The MLIT supports municipal efforts to revitalize those regions where ports and harbors are located by granting General Social Infrastructures Development Subsidies to them. Port Promotion Plans for 42 projects have been accredited so far.

Further, Harbor Oases have been deployed nationwide to use port and seaside facilities as centers of interaction with local people, tourists and so on. As of the end of FY2012, 68 ports are registered across Japan. The National Council on Harbor Oases, which is committed to making these Harbor Oases a forum of information or human interaction, jointly implementing projects that help promote Harbor Oases nationwide, sponsors events, such as the “Harbor Oases Sea Gourmet National Convention,” stages joint promotional activities and so on.

In addition, efforts to promote regions around the core of a port are in progress, such as upgrading passenger terminals at a port to encourage overseas, as well as domestic, cruise ships to stop at the port.

⑥ Building centers of marine leisure

The MLIT promotes the inauguration of Umi-no-eki (Marine Stations; 143 as of the end of FY2012) to serve as a center of marine leisure and regional revitalization each and supports the implementation of events that give families, children, physically handicapped people, etc. a hands-on experience with the joy of marine leisure, keep them informed and so on and otherwise host campaigns to arouse national interest in the sea. It also proceed with the development of an appropriate usage environment, as by exploring the possibility of making available fishing ports accessible to pleasure boats to address the needs of their users in consultation with the Fisheries Agency.

(5) Promoting the maintenance of cadastral maps positively

Cadastral surveys are conducted by municipalities with regard to the boundaries of each individual parcel of land. The MLIT is keen to promote the maintenance of cadastral maps positively through the acceleration of cadastral surveys in the urban areas where such surveys lag behind, the implementation of public-private boundary surveys by the government in preparation for cadastral surveys, the implementation of boundary information maintenance surveys in the mountainous villages, review of the ways to utilize survey findings other than cadastral surveys and so on.

In the Great East Japan Earthquake-stricken areas, the clarification of the boundaries of land is promoted through the implementation of public-private boundary surveys by the government to speed up the pace of reconstruction.

As a lesson learned from the Great East Japan Earthquake, the maintenance of cadastral maps is also promoted mainly in those areas that are predicted to fall victim to massive quakes in the future, to help enhance the regional power to defend against quake damages in coordination with the efforts to prepare for and reduce the effects of natural disasters.

Graphic II-4-2-4 National Map of Harbor Oases



(6) Deep underground utilization

Technological studies on smoother reviews are in progress to facilitate the implementation of highly public projects in the three major metropolitan areas based on the “Act on Special Measures concerning Public Use of Deep Underground.” In addition, information about deep underground is exchanged by means of the “Deep Underground Utilization Council” that has been formed of national administrative agencies and prefectures concerned for each of the target areas (Tokyo Metropolitan, Kinki Metropolitan and Chubu Metropolitan Areas).

4 Autonomy and Revitalization of Wide-Area Blocks, and Formation of National Land

(1) Autonomy and revitalization of wide-area blocks

To achieve regional revitalization and sustainable growth, it is important to deploy measures in an integrated manner while drawing out regional wisdom and devices. To this end, the deployment of measures tailored to characteristics of the diverse wide-area blocks has been pursued with a view to shaping a national land in which the wide-area blocks can grow autonomously in line with the National Spatial Strategies and Regional Plans. The MLIT also pursues measures to promote the formulation and implementation of strategies by public-private partnership organizations to allow various regional entities to step up the revitalization of their regions by taking advantage of their specific characteristics, to provide governmental aid to these entities and to proceed with community development by the leaders of a “new standard of publicness.”

① Promoting regional autonomy and revitalization

To implement hardware-software mixes of efforts designed to form autonomous wide-area blocks and thus to revitalize the regions through buoyant human traffic or material, the MLIT has granted subsidies to the plans for 75 regions based on the wide-area regional revitalization infrastructures development plans prepared by prefectures. To pursue revitalization of wider-area regions, a total of 33 plans acting on 13 regions have been subsidized based on the wide-area regional revitalization infrastructures development plans prepared with collaboration between multiple prefectures.

② Promoting the development of infrastructures for regional revitalization with partnership between the public and private sectors

The system was inaugurated in FY2011 which facilitate smooth migration of those projects that have been worked out in a partnership between the public and private sectors to contribute to the implementation of wide-area regional strategies for target regions, from the stage of infrastructures development planning into the stage of project implementation smoothly and speedily at the timing of private decision making. In FY2012, 16 inquiries were supported, including those into the issues of feasibility of introducing renewable energies into public civil-engineering facilities.

③ Promotion of community development by leaders of a “new standard of publicness”

To address the problems the leaders of a “new standard of publicness” are confronted with, such as shortages of human resources, funds and resources and management know-how, continued studies are in progress to: (a) Deliver financial and resources aid to the leaders through a framework of circulation of regional “voluntary funds” and (b) Deliver non-financial aid, such as know-how, to the leaders through intermediate support organizations, etc.

(2) Promotion, etc. of regional center formation

① Developing centers of autonomous growth of diverse wide-area blocks

The MLIT has promoted the development of regional centers as a foothold for the concentration of unique local industrial, cultural and other features in accordance with the “Multi-Polar Patterns National Land Formation Promotion Act.” In addition, the development of core cities^{Note} as defined in the National Capital Region Development Plan continues, by relocating business facilities and concentrating various other functions in the core cities, helping ease excessive concentration in downtown Tokyo to some extent. The development of core cities will continue further. In addition, the MLIT has driven the construction of Tsukuba Academic City to pursue urban revitalization by taking advantage of an accumulation of science and technology in accordance with the “Act on Construction of Tsukuba Science City.” Further, environmentally friendly cities are being built along the Tsukuba Express railway line by leveraging the characteristics of

Note Cities that are located at a location other than the wards of Tokyo and that should each serve as a core of a reasonably wide area surrounding that location (14 centers).

Tsukuba Science City as the pace of urban development accelerates. In the Kinki Metropolitan area, on the other hand, the construction of Kansai Science City is underway to form a new foothold for the deployment of cultural, academic and research activity in accordance with the “Act on Advancement of Construction of Cultural and Academic Cities in Kansai Area.” Further efforts to promote the science city continue in a partnership among the ministries concerned, local governments, economic circles and so on pursuant to the “Basic Policy for the Construction of Kansai Science City” that reflects the “Third Stage Plan.” In addition, the MLIT promotes the implementation of a development plan based on the “Act on Development of Osaka Bay Areas” to make a district that is complete with the facilities of a global city, good living amenities and more.

② Reviews of the relocation of the Diet and other central government offices

The MLIT aids the Diet in its reviews of the planned relocation of the Diet and other central government offices, by conducting surveys, disseminating information to the nation and so on.

5 Promoting Regional Partnership and Interaction

(1) Forming a trunk-line network to support regions

To realize the safe, comfortable relocation in the central part of an area having urban functions, such as medicine and education, the MLIT supports the elimination of bottlenecks, as by widening the existing roads, and development of road networks. Further, the development of roads that connect the central area of a municipality to each of its centers, such as public facilities, bridges and so on is being promoted by implementing municipal merger support road development projects in collaboration with the Ministry of Internal Affairs and Communications.

(2) Promoting human interaction between cities and farming, mountain and fishing villages

The MLIT implements projects for promoting the revitalization of villages to support the renovation of the existing public facilities, such as closed school buildings, located in handicapped areas (depopulated areas, mountain villages, remote islands, peninsulas and heavy-snowfall areas) to turn them into human interaction facilities, forms axes of human wide-area interaction and partnership through the development of trunk road networks, supplies housing and housing lands to help realize a country life, develops ports and harbors to serve as centers of human interaction and more. It also promotes the creation of new breeds of tourism, such as green tourism, and the activities of “All Right! Nippon Conference” and so on in collaboration with the Ministry of Agriculture, Forestry and Fisheries and other ministries concerned to promote human interaction between cities and farming, mountain and fishing villages.

(3) Promoting regional settlement, etc.

Information on the municipalities that implement projects regarding U-, J- and I-turns and settlement in localities, such as mutual interactions between city dwellers and local residents through participation in community development activities and exposure to agricultural or forestry experiences is being disseminated from a Ministry of Land, Infrastructure, Transport and Tourism Website.^{Note 1} In addition, Information is also available from a Website regarding the issues of dual-area residence, etc. to promote the attraction and movement of people into localities from viewpoints of various kinds of population, such as dual-area resident, exchange and informational exchange populations.^{Note 2}

The MLIT also supports the appropriation of General Social Infrastructures Development Subsidies for the utilization of vacant houses and buildings and disseminates information about the measures taken by local governments in connection with house replacement and dual-area residence, information about nationwide banks of vacant houses and to address the issues of a wide range of regional issues.

6 Securing Means of Regional Transport

(1) Securing, maintaining and improving means of regional transport

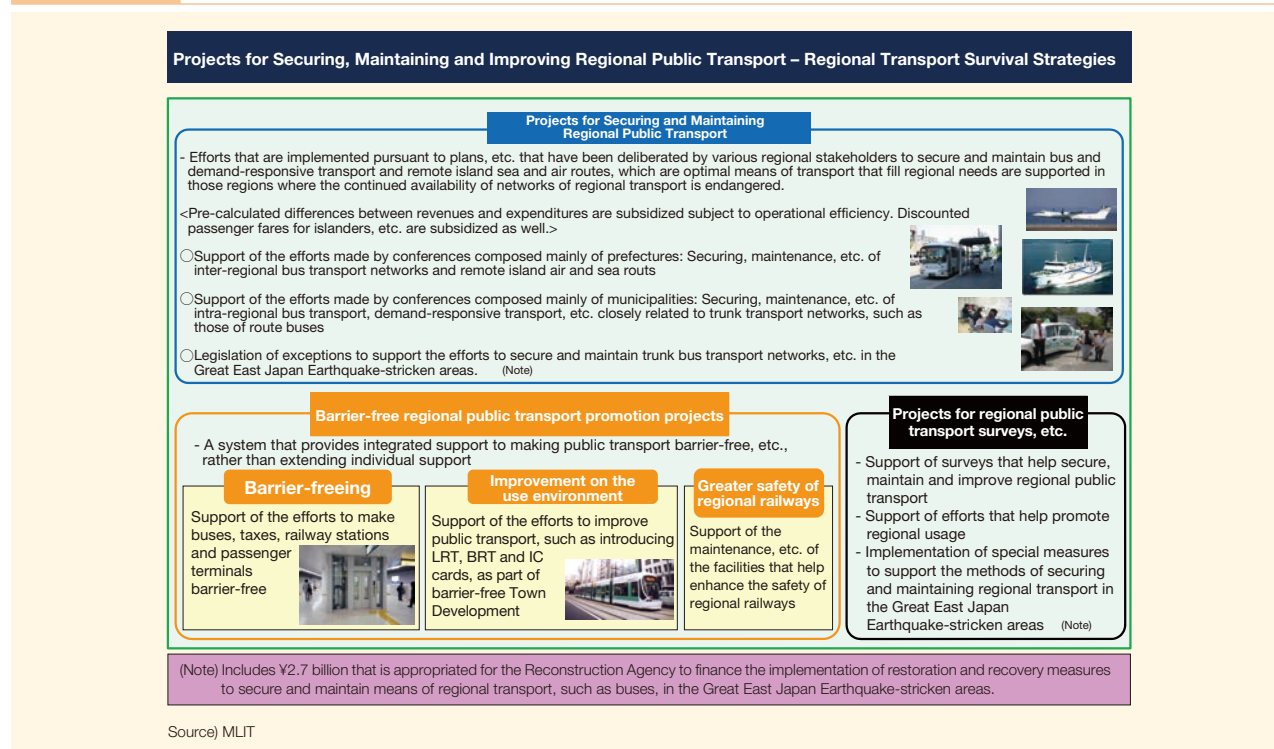
For those regions in which the continued availability of regional transport is endangered, the MLIT supports a framework of implementing regional public transport maintenance and improvement projects based on the regional transport plans that have been deliberated by various regional stakeholders to secure an optimal means of transport suited

Note 1 http://www.mlit.go.jp/kokudoseisaku/chisei/crd_chisei_tk_000007.html

Note 2 <http://www.mlit.go.jp/kokudokeikaku/nichiiki/index.html>

to specific characteristics and conditions of those regions and to remove barriers that impede public transport, as by introducing barrier-free or less-constrained systems.

Graphic II-4-2-5 Projects for Securing, Maintaining and Improving Regional Public Transport



(2) Activating regional railways and supporting safety assurance, etc.

While regional railways not only support the livelihood of the local residents living along the railways as a means of their daily transport but also play an important role in providing them with public transport of critical importance in supporting regional interaction between tourist resorts. However, their management is in an extremely tough situation. For this reason, the MLIT extends its support to the development of safety facilities by way of Projects for Securing, Maintaining and Improving Regional Public Transport or tax incentives and also to the construction, of new stations on those regional routes that hold large potential needs for railway usage by way of projects designed to activate trunk railways, etc. In addition, the MLIT is exploring ways to promote the deployment and proliferation of dual-mode vehicles (DMVs),^{Note 1} which are expected to add a new charm to regional tourism, by organizing the Review Meeting on the Deployment and Proliferation of DMVs.

(3) Subsidizing regional bus routes

Securing and maintaining means of regional public transport, such as public buses, for the benefit of local residents, particularly those with limited access to transport, such as elderly people and schoolchildren, is of critical importance. To help secure and maintain optimal networks of regional transport tailored to specific regional characteristics and conditions, the government has a policy of providing integrated support to the availability of regional transport services (such as inter-regional bus transport networks^{Note 2} or bus, demand-responsive and other forms of regional transport^{Note 3} closely related

Note 1 DMVs are vehicles that are furnished with specially structured wheels to allow them to transfer from a road to a railway and that are capable of running freely on both roads and railways by way of a drive mode conversion device (mode interchange).

Note 2 Wide-area, trunk bus routes whose maintenance and availability is deemed necessary by a conference and that meet government-stipulated criteria (such as spanning multiple municipalities and operating at least three times a day).

Note 3 The form of passenger share-ride transport that provides door-to-door transport services in a manner responsive to concentrated user demand.

to trunk transport networks) under a scheme of shared responsibility with local governments. For other routes, relevant financial measures are taken to enable local governments to maintain them at their own discretion.

(4) Supporting transport to and from remote islands

To secure air transport to and from remote islands, the MLIT subsidizes airframe purchase costs, running costs and MTSAT Satellite-based Augmentation System (MSAS) receiver purchase costs and eases landing fees and aviation fuel and fixed property taxes for common air carriers serving as far as remote islands. Running costs have been subsidized since FY2011 by regional public transport securing, management and improvement projects. Passenger fares for islanders have been newly subsidized to extend the scope of support from FY2012 onward.

Remote island sea routes, a vital means of transport to support islanders' daily living, are now extremely tough to economically manage. The running costs of those sea routes that are anticipated in the red and for which no alternative routes are available are subsidized by regional public transport securing, management and improvement projects. In addition, discounted passenger fares for islanders have been subsidized and port facilities have been developed to close gaps with other regions and to add convenience to the islanders' lives.

In FY2011, 67 remote island air routes were in service, and 300 sea routes were in service at the end of FY2011 (120 of which are government-subsidized sea routes).

Section 3 Promoting Urban Reconstruction Projects, etc.

1 Promoting Urban Reconstruction Projects

An urban reconstruction project is an action plan that combats a variety of urban issues that need to be solved in an all-out effort in cooperation and collaboration with the ministries concerned, local governments, private entities and so on. An action plan is selected if it:

- ① Combats a basic issue relevant to an urban structure or requires in an all-out effort of the ministries concerned to combat one, with resort to a totally new method, or
- ② Helps draw power from the private sector or makes for greater land mobility from a viewpoint of leading to an economic structural reform.

By the end of March 2013, 23 urban reconstruction projects had been accredited by the Urban Reconstruction Headquarters.

2 Promoting Urban Development by Private Sectors

(1) Promoting urban development by private sectors based on the Specific Urban Reconstruction Emergency Development Area program

While rapidly growing Asian nations have resulted in a proportionate decline in Japan's international competitiveness, it has become an essential task to provide a powerful boost to the development of the urban areas in the nation's major cities, a source of impetus to the national growth, in a partnership between the public and private sectors to turn them into attractive urban centers that lure businesses, human resources and more from overseas. To this end, the "Act on Special Measures concerning Urban Reconstruction" was amended in April 2011, which singled out 11 areas nationwide as "Specific Urban Reconstruction Emergency Development Areas" in January 2012 to toughen urban international competitiveness. In seven of them, development plans were formulated by councils formed in a partnership between the public and private sector.

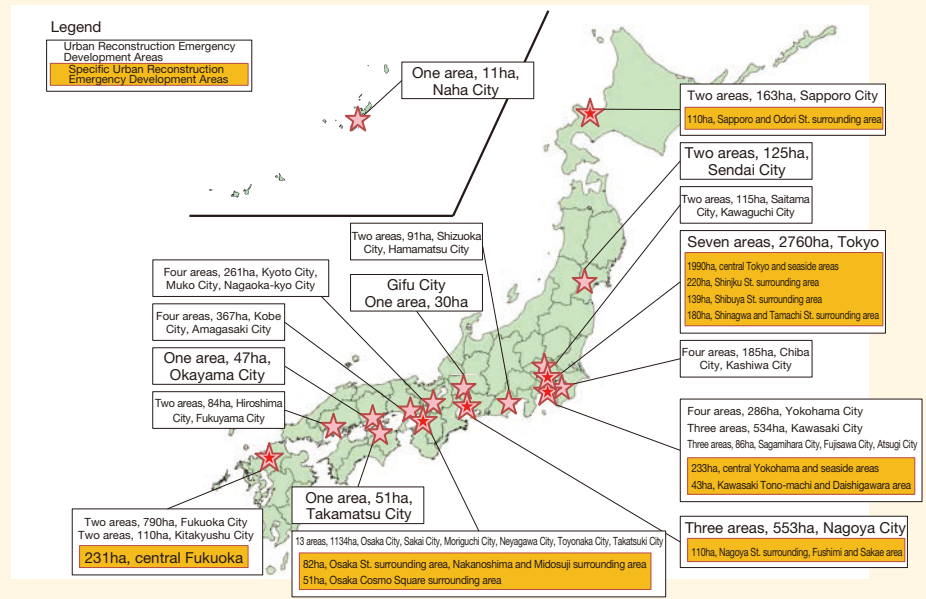
In Specific Urban Reconstruction Emergency Development Areas, the MLIT supports urban development by private sectors by deregulating the private use of untapped sewage energy sources and the use of road airspaces, offering tax incentives and so on, in addition to the support measures already available to an Urban Reconstruction Emergency Development Area. The International Competition Base City Development Project has also been launched to provide prioritized, concentrated support to the development of urban center infrastructures in accordance with development plans.

As of the end of March 2013, a total of 63 Urban Reconstruction Emergency Development Areas were registered in government-ordinance-designated cities and prefectural capitals, including Tokyo and Osaka, hosting a variety of urban

development projects by private sectors in steady progress. In addition, a mezzanine financing service^{Note} is implemented by the Organization for Promoting Urban Development to support the raising of middle-risk funds.

Graphic II-4-3-1

Status of Designation of Specific Urban Reconstruction Emergency Development Areas and Urban Reconstruction Emergency Development Areas



Source) Regional Revitalization Bureau (Cabinet Secretariat) and MLIT

(2) Status of application of the measures to support urban reconstruction projects

① Zoning for Special Urban Reconstruction Districts

A Special Urban Reconstruction District is a new concept of urban district, with greater latitude of zoning, that is exempt from existing zoning restrictions. A total of 60 Special Urban Reconstruction Districts were zoned as of the end of March 2013, 41 of which had been proposed by private entrepreneurs, etc.

② Accreditation of private urban reconstruction project plan

Private urban reconstruction project plans accredited by the Minister of Land, Infrastructure, Transport and Tourism (63 plans as of the end of March 2013) are financially supported by the Organization for Promoting Urban Development or granted tax incentives.

Examples of Central Tokyo and Coastal Regions

Example of a Private Urban Development Project Accredited by the Minister of Land, Infrastructure, Transport and Tourism Loop Route 2 Shimbashi-Toranomon District Category 2 Urban District Redevelopment Project

Areas around Shimbashi on Loop Route 2, Akasaka and Roppongi aim to shape a globalized area of human interaction offering diversified functions, including international financing.

This Project expects to build a new multifunctional urban complex housing a diversity of functions, including business facilities that make for the formation of an international business center, urban residences complete with good dwelling amenities, commercial facilities that create festivities and hotels and conference halls that host forums of international cultural and human interaction. Further, it builds a large low-rise square connecting to the ground to of Loop Route 2 to create a broad, expansive space of green and openness to forge an urban center full of green and pleasing comfort, as well to provide a disaster protection center to make for urban rejuvenation from the aftermaths of natural disasters.



Source) MLIT

Note The mezzanine financing service supports the raising of middle-risk funds (such as loans granted subject to a special provision that leaves the payment of the principal and interest subordinate in order) by the Organization for Promoting Urban Development to finance the implementation of those projects involving the development of public facilities that are committed to developing environmentally friendly buildings and their sites and that are accredited by the Minister of Land, Infrastructure, Transport and Tourism.

(3) Promoting the formation of larger blocks

While many of the central areas of Japan's major cities have been organized in a blocked structure through the implementation of postwar reconstruction land adjustment projects, etc., these blocks were essentially designed to reflect the then prevailing needs for land usage, transport infrastructures and disaster preparedness and also the contemporary levels of architectural technology, the scales of these blocks and the structures of their streets no longer fully support the current needs. Pursuant to Larger Block Structure Guidelines designed to proceed with intensification of the land segmented into multiple blocks, the MLIT promotes the concept of advanced land usage to reflect today's needs for land usage to help strengthen the international competitiveness of major cities and rehabilitate urban cities.

Section 4 Promoting Localized Promotion Measures**1 Measures for Heavy Snowfall Areas**

The MLIT not only promotes the availability of transport and the development of the living environment and national land management facilities under the "Act on Special Measures concerning Countermeasures for Heavy Snowfall Areas" but also conducts surveys for safe, comfortable community development. As of April 2012, 532 municipalities were specified as heavy-snowfall areas (201 of which were designated as special heavy-snowfall areas).

2 Remote Islands Development

In addition to the batch appropriation of public-works project budget, the MLIT extends support to the approaches to island development that assume the originality and ingenuity of the remote island areas themselves to support the implementation of remote islands development projects derived from remote islands development plans formulated by municipalities in accordance with the Remote Islands Development Act.

In June 2012, an amendment to the "Remote Islands Development Act" was enacted to expressly define the promotion of settlement as a new objective, thereby stipulating the nation's obligations and also incorporating provisions to promote the implementation of measures to make for buoyancy of the regional islands.

3 Promoting and Developing the Amami Islands and the Ogasawara Islands

The MLIT implements promotion and development projects under the "Act on Special Measures for the Amami Islands Promotion and Development" and the "Act on Special Measures for the Ogasawara Islands Development" to improve the vital conditions of these islands and also supports autonomous regional efforts taking advantage of their regional characteristics, thereby promoting the creation of an environment that makes for autonomous regional growth, as by promoting industries or tourism.

4 Promoting the Development of Peninsular Areas

The MLIT supports the development of peninsular loop roads, etc. and the promotion, etc. of industries in the peninsular areas under development (as of April 2012, 23 areas spanning 194 municipalities in 22 prefectures) based on the peninsular areas development plans prepared by municipalities in accordance with the "Peninsular Areas Development Act."

In addition to conducting surveys for collecting and analyzing the information relevant to the enforcement of the "Peninsular Areas Development Act," the MLIT also directs experimental surveys concerning the approaches to intrinsic community development or inter-peninsular partnership designed to develop leaders of the autonomous growth of the peninsular areas that leverage regional resources, such as agricultural, forestry and fishery resources, and collects relevant knowledge and disseminates it regionally.

Section 5 Promoting Integrated Development of Hokkaido

1 Promoting the New Hokkaido Comprehensive Development Plan to Lead the Era of the Global Environment

(1) Promoting the Hokkaido Comprehensive Development Plan

Japan has followed an active policy of developing Hokkaido to help resolve the problems then facing the nation and to achieve powerful regional growth by taking advantage of the excellent resources and characteristics of Hokkaido.

Measures are being taken focusing on the fields of food, tourism, environment and energy to realize the three strategic goals of “Open and competitive Hokkaido,” “Sustainable and beautiful Hokkaido” and “Hokkaido comprising varied, individualistic regions” on the basis of the seventh phase of the “New Hokkaido Comprehensive Development Plan to Lead the Era of the Global Environment.”

Because the Plan is scheduled to be overhauled about five years after its formulation, the tasks the Plan should cope with and the directions in which it should head were reviewed in consideration of changes, etc. in the socioeconomic climate in FY2012.

(2) Working to realize the Plan

① Strengthening the total food supply capacities

To strengthen the food supply capacities of Hokkaido that command 25% of the nation’s farmland area, the farmland in Hokkaido has been consolidated in larger lots, etc. to augment the productive capacities. The MLIT also supports efforts to create higher added values through the implementation of more advanced expertise of quality control, collaboration with tourism and so on. In addition, the MLIT promotes the development of the infrastructures relevant to tougher logistics. Approaches to fostering food industries include implementing HOP (Hokkaido export Platform) to facilitate direct, stable export of Hokkaido-made products.

② Creating internationally competitive, appealing tourist sites

Efforts are underway to improve the tourist reception environment in Hokkaido by trimming travel time and easing round-trips through infrastructures development, working on the Scenic Byway Hokkaido campaign and so on to take advantage of the potentials of Hokkaido with its appealing tourist resources, such as scenic beauty and food. Further, multi-language editions of a drive handbook are distributed for the sake of better tourist convenience. Regional efforts aimed at promoting Hokkaido as a host to international conventions of conferences (MICE) in Hokkaido are also supported.

③ Forming a sustainable regional community that lives symbiotically with the nature

The preservation and reproduction of marshlands, the construction of breakwaters conscious of the habitat environment for aquatic organisms, purification of rivers and lakes, etc. are being promoted to shape a sustainable regional community that lives symbiotically with the nature. Further, since Hokkaido is rich in renewable energy resources, efforts to exploit them are being deployed across Hokkaido.

④ Enhanced network and mobility to support internal and external interactions

To achieve the three strategic goals of the Hokkaido Comprehensive Development Plan, the MLIT has driven the development of key transport infrastructures, such as high-standard highways, airports and harbors, the reinforcement of logistic network facilities, etc. effectively in collaboration with various entities. The MLIT also carries on active efforts to add to the safety and reliability of winter-time transportation.

Scenic Point on the Cosmos Road (Kiyosato-cho)



(Source) East Okhotsk Scenic Byway

⑤ Building a safe, secure land

Japan has recently been hit by a chain of major natural disasters, including the Great East Japan Earthquake. Hokkaido, too, has suffered heavy snowfalls, severe snowstorms, landslide disasters and wind and flood damages and remains largely open to massive earthquakes, such as those stemming from the Japan and Kuril Trenches, and tsunami, posing a number of tasks that need to be solved before a safe, secure regional community can be formed. Hence, the MLIT has promoted disaster preparedness efforts in conjunction with local governments, residents, etc. to make social infrastructures immune to earthquakes, take integrated packages of flood control and landslide control measures, build reliable networks of roads, reinforce crisis management systems and so on. In the meantime, looming concerns over the maintenance and management of aging facilities step up efforts to get the jobs done effectively and efficiently, including ways to combat aging, make the facilities longer-lived and perform preventive management on them.

2 Promoting Distinctive Regions and Cultures

(1) Promoting the regions neighboring the Northern Territories

The MLIT has driven the implementation of those measures necessary to promote the regions neighboring the Northern Territories in which the desirable growth of a local community has been impeded because of a pending territorial issue and also to stabilize the living of the local residents in this region in an integrated manner. In FY2012, a conference was formed by the national government, Hokkaido and one city and four towns in the regions neighboring the Northern Territories to explore a package of the structural measures that need to be promoted on a priority basis during the Seventh Northern Territories Neighboring Region Promotion Planning Period (FY2013 to FY2017) and the non-structural measures to leverage the structural measures in an effort to shape an appealing regional community in the neighboring region.

(2) Promoting the Ainu Culture, etc.

The MLIT disseminates the concepts of the tradition and culture of the Ainu, a source of the pride the Ainu people take, pursuant to the “Act on the Promotion of Ainu Culture, and Dissemination and Enlightenment of Knowledge about Ainu Tradition, etc.”

In FY2012, a welcome message “irankarapte (Hello.)” in the Ainu language was put up at a connecting passageway between the domestic and international terminals at New Chitose Airport.

Further, the MLIT deliberates on the future course of the dissemination and enlightenment activity in a partnership with various entities, such as authorities concerned and private enterprises, that was compiled with a view to promote public understanding based on the report of the Working Group for Ainu Policy Promotion.

The Ainu people welcome visitors by the traditional Ainu dance at an international terminal at New Chitose Airport



Source) MLIT

Column

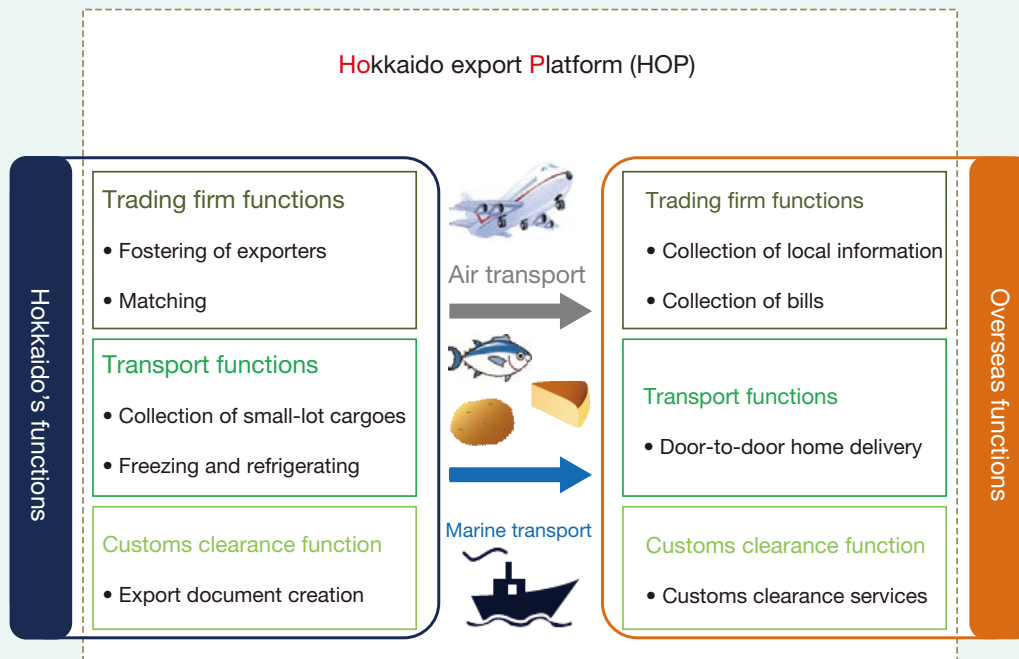
Building a HOP – Effort to Promote the Exportation of Hokkaido-Made Products

While Hokkaido-made products, such as farm and marine products and processed food, have met with an exceptionally high evaluation in Asian countries, needs for Hokkaido-made products are often small-sized and varied and the cargoes requires temperature management during transit, such as refrigerating and freezing. In the circumstances, Hokkaido is obliged to miss export opportunities because of its lack of the logistic functions for efficiently moving less-than container loads of frozen and refrigerated cargoes and the commercial distribution functions, such as business transaction services tailored to multi-item, high-frequency demands.

In a bid to address these issues of logistics and commercial distribution and to help expand the exports of Hokkaido-made products and simplify the flow of their distribution, the Hokkaido Regional Development Bureau, the Ministry of Land, Infrastructure, Transport and Tourism inaugurated “The Hokkaido products export promotion study group through international distribution” jointly with Sapporo University in September 2011. The Workshop proposes “Hokkaido export Platform (HOP),” a scheme of exporting Hokkaido-made products directly and consistently, including services that move less-than container loads of frozen and refrigerated cargoes.

With the participation of private logistic firms in support of this concept, “Sample airfreight transport service” and “Services for transporting less-than container loads of frozen and refrigerated cargoes” have been launched since September 2012. The Study group is also exploring plans to transport frozen and refrigerated goods in a consolidated fashion by sea and by overseas maritime transport in railway containers.

The Study group, working in cooperation with the agencies concerned, aims to complete HOP in a five-year program.



Source) MLIT

Chapter 5

Creating a Comfortable Living Space

Section 1 Realizing Affluent Housing for People

1 Securing stability and improving housing for people

In accordance with the new release of the Basic Plan for Housing approved by the Cabinet on March 2011, covering from FY2011 to FY2020, to reflect the full-scale emergence of an aging society with falling birthrates, declining population and families, changes in the socio-economic climate, such as tough employment and income environment, needs for housing life support services and more, the Ministry advances the implementation of measures for securing stability, and improving housing for people in view of achieving the following goals:

- ① Establishment of the housing environment to support safe and secure housing life;
- ② Appropriate management and restoration of housing;
- ③ Development of the housing market environment that appropriately realizing varying housing needs; and
- ④ Stable supply of housing of those who particularly needs housing.

(1) Establishment of the housing environment to support safe and secure housing life

To prepare a safe and secure housing and living environment, the Ministry promotes seismic strengthening and other forms of refurbishment for houses and structures as protection against disasters such as large-scale earthquakes, and the supply of “Housing with Supportive Services for the Elderly” as a mix of medicine, nursing care and dwelling, and also to secure housing in which elderly people can live with an ease of mind. It also encourages housing with better energy-saving performance, utilization of local wood, etc. to near the goal of realizing a low-carbon society.

The Ministry is also keen to preserve and form townscape and beautiful scenery to enhance comfort and affluence of housing while enhancing the convenience of houses and elderly people, etc. living in urban areas through promotion, etc. of downtown residence.

(2) Appropriate management and restoration of housing

The condominium, as a substantial form of residence in Japan with 5.79 million units in existence by the end of 2011, creates various challenges in management, maintenance and revitalization to be addressed.

To make good use of the condominium stock, the Ministry held the workshop to discuss on revitalization of the multifamily housing stock and released a package of technical information for revitalization including the collection of specific construction methods.

To facilitate proper management of condominiums, the Ministry holds the committee to formulate new management rules for condominiums, to review issues including the use of experts in management, decision-making rules in emergencies such as natural disaster and provisions for eliminating antisocial forces.

To facilitate the retrofit and reconstruction of aging condominiums, the Ministry offers supportive measures in the form grants, loans and tax incentives.

Under the Act on Facilitating Reconstruction of Condominiums, whole authorities, including accreditation of the reconstruction association, have been delegated from prefectures to city councils. A total of 65 condominium reconstruction projects had been accredited under the Act across the nation as of October 1, 2012.

(3) Development of the housing market environment that appropriately realizing varying housing needs

① Preparing a market that facilitate smooth trading of existing houses

The approaches outlined below have been promoted to prepare a market in which existing houses are smoothly tradable, on the basis of the “Comprehensive plan for renovation and distribution of existing home” (established in March 2012).

Since March 2013, Workshop on Utilizing and Promoting trades for existing homes has been hosted to debate programs that help promote the trades for existing homes.

(a) Preparing the market environment in which consumers can renovate their homes with an ease of mind

Consumers planning to renovate their homes are concerned about the cost and how to select the right contractors. Keeping the worried consumers reassuring is essential to an expanding the home renovation market.

Efforts currently taken in this regard include the Renovation Estimate Checking Service available from the Center for Housing Renovation and Dispute Settlement Support, in which consumers can receive consultation on specific quotations, and Free Expert Advice at local bar associations. FY2012 marked 535 renovation estimate checks and 722 free expert advice sessions on renovation construction.

To enhance the framework of providing information on the costs of renovation construction, Points to Check Renovation Estimate for Yourself, which summarizes considerations for consumers to remember in verifying quoted costs of renovation construction for themselves and Renovation Estimate Advice Manual for local governments and so on as a reference in answering consultations sought by consumers in connection with the costs of home renovation and so on were publicized from the Center for Housing Renovation and Dispute Settlement Support in June 2012. These two documents have since been widely known and disseminated.

In addition, the Center for Housing Renovation and Dispute Settlement Support released case studies derived from its consultation service and advices to consumers on March 7, 2013 to prevent troubles and to support consumers once they are involved in troubles.

In FY2012, there were 2,625 applications to the Defect Insurance on Renovation Work, which combines inspections on renovation work with warranties against defects in the works, and 495 applications to the Defect Insurance for Large-scale Renovation Work, which applies to large-scale renovation works for apartment houses.

Contractors seeking insurance must acquire registration with the Housing Insurance Company. The registration is subject to their possession of a construction license, proven performance and so on. The list of registered contractors is published on the Website of Association of Housing Warranty Insurers (AHWI), and it supports consumers in choosing contractors.

(b) Preparing the market climate in which consumers can purchase used houses with an ease of mind

As consumers consider purchasing a used house, they are fearful about the quality or performance of the used house. Expansion of the used house distribution market would not possible without resolving such fears cherished by the consumers.

The Existing Housing Inspection Guidelines Review Conference is working to explore ways to secure the technical competencies of those, such as licensed architects, who are in a position to inspect and survey used houses and identify what are relevant items of inspections and surveys, their methods and so on, to promote the diffusion of a scheme of inspection under which third parties inspect and survey used houses and thus enable consumers to understand the conditions and quality of the properties they are about to purchase.

There were 2,117 applications to the Defect Insurance for Traded Existing Houses in FY2012, which is for inspections on used housing with warranties against defects in the housing. During the same fiscal year, defect insurance for traded existing houses -accessible to both consumers and traders and suited to dealings with an apartment- was inaugurated as an insurance product for trading used houses.

Like the Defect Insurance on Renovation Work system, the Defect Insurance for Traded Existing Houses system allows consumers to search through a list of registered traders at a website to aid in choosing traders.

(c) Preparing the used house distribution and renovation market responsive to consumer needs

Only an attractive home renovation market should deserve revitalization. From this viewpoint, consumer seminars were held 56 times at mass-merchandising stores, housing fairs, home renovation showrooms and other parts of Japan during FY2012 to impart the charms of home renovation to a total of 13,491 participants and advise them on what to remember in renovating their homes.

To help upgrade the quality of housing stocks and activate the distribution of existing houses, an existing house distribution and renovation project was conducted, which finances part of the costs of construction, etc. when consumers purchase and renovate houses for their own dwelling or when the large-scale repairs of apartment houses built for sale are carried out subject to inspections conducted by the Housing Insurance Company, subscription to a defect liability insurance coverage, registration and retention of historical information and so on.

② Forming long-lasting quality stocks**(a) Housing quality assurance**

A 10-year defect liability obligation has been mandated for the basic structural part of new housing in accordance with the Housing Quality Assurance Act. At the same time, Housing Performance Indication System has been put into effect that makes an objective assessment of the basic performance characteristics of new and existing houses, such as earthquake resistance, energy efficiency and protection against the sick-house syndrome. In FY2012, Performance Evaluation Report for Housing Plans were issued on 202,960 houses to assess them in their stage of design documentation, when compared with Performance Evaluation Report after completion of construction (New Housing) issued on 168,942 houses to evaluate them on field testing and Performance Evaluation Report after completion of construction (Existing Housing) issued on 372 existing houses.

Disputes arising in connection with houses that have been subjected to a housing construction performance evaluation are to be promptly and legitimately settled by local bar associations, a designated housing dispute resolution body, with support from the Center for Housing Renovation and Dispute Settlement Support. The Center also accepts applications for consultation on housing issues. In FY2012, the designated housing dispute resolution body received 29 applications to resolve housing disputes, whereas the Center received 20,629 applications for consultation.

(b) Measures to extend the life of housing

The Ministry pursues the dissemination of housing that is structured and equipped to meet certain levels of performance requirements or higher, such as durability and ease of maintenance and management (“Long-life Quality Housing”) under the Act for Promotion of Long-Life Quality Housing so that the housing can be used continuously for extended periods of time and in good condition (107,449 houses were accredited as “Long-life Quality Housing” in FY2012).

(c) Promotion of wooden housing

In recognition of the national need for wooden housing such that as much as 80% of the Japanese people favor wooden housing,^{Note 1} the Ministry supports not only supplying long-life quality wooden housing by a group of relevant companies -sustainable wood suppliers to designers and home builders- but also developing human resources relevant to the construction of wooden housing, in order to form stocks of quality wooden housing.

③ Securing housing that fulfills various living needs and filling the gap between supply and demand for housing**(a) Home financing**

The Japan Housing Finance Agency (“JHF”) offers securitization support services to provide long-term housing loans with a relatively low fixed-rate from private financial institutions. These services include the Flat 35 (purchase type), where the housing loan credits from private financial institutions are aggregated and securitized, and the Flat 35 (guarantee type), where support is provided to a private financial institutions that act as the lenders^{Note 2} and securitizes such loans by themselves. 333 financial institutions conduct the Flat 35 (purchase type); the number of application for loan purchase reached 752,215 contracts and the number of loan purchase reached 527,972 contracts as of March 2013. Five financial

Note 1 Public Poll on Forestry and Living conducted by the Cabinet Office (2011)

Note 2 A business enterprise that possesses assets for liquidation by using a asset-securitization scheme. A lender raises funds by securitizing its assets, such as by assignment of assets, such as loan receivable or real estates, and other assets to a special-purpose company.

institutions conduct Flat 35 (guarantee type); the number of application for loan guarantee reached 19,518 contracts and the number of loan guaranteed reached 12,257 contracts as of March 2013.

For houses eligible for securitization support service, property inspections are carried out against a defined set of technical requirements, such as durability, to assure their quality. In addition, the framework of the securitization support service has been utilized to provide the Flat 35S, a housing loan with discounted interest rate applied for the first 5 years (10 years discount will be applied to long-term superior house), and is available to those owning a house that meet any one of the performance requirements of earthquake resistance, energy-conservation, barrier-free, and durability/modifiability. The FY2011 third supplementary budget and the FY2012 initial budget widened the cut in the interest rate of the Flat 35S plan which finances the acquisition of energy-saving housing for the first 5 years of its repayment from 0.3% to 1.0% to areas affected by the Great East Japan Earthquake and to 0.7% in others (until October 2013) in the bid to forward earthquake restoration and construction of CO₂ emission-controlled housing.

JHF also provides direct loans, such as housing loans for disaster mitigation and/or for service provided rental housing for the elderly, to areas politically important but that cannot be easily addressed by private financial institutions.

(b) Housing tax system

The FY2013 tax reform extended and expanded the scope of housing loan, housing investment, home remodeling and other kinds of tax credit to level and mitigate the temporary impact of increases in the tax burden associated with increases in the consumption tax rate.

For those income groups on which the extended and upgraded housing loan tax credit has limited effect, an appropriate benefit package was extended to the end of 2017 from a viewpoint of the housing policy that encourages the formation of good housing stocks, so that increases in the consumption tax burden will be continuously eased to a considerable extent.

(c) Preparing the rental housing market

To upgrade the stocks of owner-occupied houses, such as stand-alone houses and condominium apartments, by making them available for rent in the rental housing market, the Ministry is working to prepare the rental housing market as by disseminating the fixed-term house rental system and normalizing the subleasing business.^{Note}

(4) Stable supply of housing for those particularly in need

① Supply of public rental housing, etc.

To deliver public housing supplied by local governments precisely to low-income earners in serious need of housing and promote the supply of quality rental housing to households consisting of elderly people, etc. who need special consideration to stabilize their housing, the Ministry positions the Regional Excellent Rental Housing Program as a scheme that complements the work of public housing and subsidizes the expenses incurred for the development, etc. of public rental housing, etc. and also for the reduction of the rents.

To provide a housing safety net for those who are obliged to leave their homes because of dismissal or any other reason, the Ministry promotes a single-source information service that releases information about the public housing available to the retiring individuals, rental housing from the Urban Renaissance Agency and so on in coordination with local branches of Hello Work (Public Employment Security Office) and also takes actions aimed at stabilizing the dwelling of the retiring individuals, as by driving rent subsidization, etc. from General Grants for Social Infrastructures.

Graphic II-5-1-1 Housing Loan Tax Reduction System Summary (2014 to 2017)

Occupancy year	Deduction rate	Deduction period	Maximum deduction amount	Upper limit to deductions from the inhabitant tax
January to March 2014	1.0%	10 years	2 million yen ^{(Note) 1}	97,500 yen
April 2014 to December 2017	1.0%	10 years	4 million yen ^{(Note) 2}	136,500 yen

(Note) 1 3 million yen for Long-life Quality Housing and Low-carbon housing
 2 5 million yen for Long-life Quality Housing and Low-carbon housing
 Source) MLIT

Note The business of a rental housing management firm renting a building from its owner (landlord) or else for subleasing and then hiring it out as a sublessor to a sublessee.

Graphic II-5-1-2 Purposes and Results of Public Rental Housing

	Purpose	Number of houses managed
Public housing	Supplies quality rental housing to low-income earners who are in serious need for housing for a low rent.	About 2,170 thousand houses (FY2011)
Improved housing	Supplies public rental housing to existing residents who are in serious need for housing a deteriorated residential area	About 150,000 houses (FY2011)
Urban Renaissance Agency's rental housing	Supplies quality rental housing that is conveniently located for access to work, focusing on family-oriented rental housing hardly in ample supply from private business entrepreneurs, in major urban areas, as well as develops residential districts (since FY2002, a privately supplied support rental housing program has been launched to support the supply of family-oriented rental housing, etc. from private business entrepreneurs).	About 760,000 houses (FY2011)
Agency's rental housing	Supplies quality rental housing to fill the regional demand for rental housing.	About 130,000 houses (FY2011)
Regional excellent rental housing	Provides subsidies to private land owners, etc. to fund maintenance and other expenses and cover rent cuts to provide excellent rental housing for households consisting of elderly people, child-raising families and so on.	<ul style="list-style-type: none"> • About 140,000 designated excellent rental houses (FY2011) • About 31,000 designated excellent rental houses for elderly people (FY2011)

(Note) 1 The number of rental houses managed by the Urban Renaissance Agency includes designated excellent rental houses for elderly people.
 2 The number of rental houses managed by the Agency does not include designated excellent rental houses and designated excellent rental houses for elderly people.
 3 In FY2007, the designated excellent rental housing program and the designated excellent rental housing program for elderly people were reorganized to inaugurate a regional quality rental housing program.

Source) MLIT

② Utilization of private rental housing

The Ministry is committed to providing housing support services, including the availability of housing information, etc., to enable elderly people, physically handicapped people, foreigners, child-raising families and so on to move into private rental housing smoothly through the medium of a Housing Support Council, which is composed mainly of local governments, real estate associations and housing support bodies, from a viewpoint of upgrading the safety net functionality of private rental housing.

2 Supply and Utilization of Good Housing Land

(1) Land value trends

According to the posted Land Market Value Publication for 2013 (as of January 1), land value continued to decline nationwide, but the decline slowed down, with the values remaining unchanged or increasing for an increasing number of sites, showing signs of recovery in some areas. Further, semiyearly land value trends observed at the same survey sites as used in the Land Price Research by Prefectural Governments (as of July 1) show that the rate of reduction was narrower in the latter half of the year than in the first half.

Areas hit by the Great East Japan Earthquake varied in the extent of damages they had suffered, but restoration work progressed and the demand for housing relocation to higher residential grounds elevated in these areas, with the land values rising in multiple municipalities in Iwate Prefecture and Miyagi Prefecture. In Fukushima Prefecture, the rate of reduction narrowed drastically from a year earlier.

(2) Present status and problems of housing land supply

A shift from the traditional course of policy that promoted a large supply of new housing land to a housing land policy that reflects trends in population and household has been driven. Urban Renaissance Agency now works only on the new town projects that had already been initiated. The Ministry also supports the development of public facilities relevant to the development of housing land and offers preferential tax measures, etc. to promote the supply of housing land furnished with a good dwelling environment.

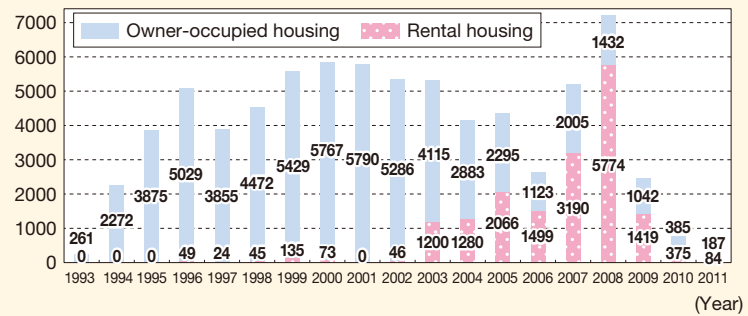
(3) Utilization of fixed-term land leases

Fixed-term land leases are a system instrumental in providing quality housing for an affordable cost, because they

terminate determinately upon expiry of a predetermined contract term, without being renewed. By the end of 2011, more than 70,000 houses had been supplied on a fixed-term land lease basis.

To facilitate wider dissemination acceptance of this system, the Ministry is working to clarify the tax procedures, etc. for handling prepaid rents – a third kind of lump-sum payment next to deposits and premiums.

Graphic II-5-1-3 Developments in the Supply of Housing on Fixed-Term Land Leases



Source) MLIT

(4) Revitalizing aging new towns

The Ministry is ready to address the needs to upgrade urban residential areas (new towns) that have been developed on a planned basis as their houses and facilities age and the residents get older and divide into smaller families and thus continue utilizing them as acceptable stocks.

It also provides information on area management^{Note} that aids in revitalization of the new towns.

Section 2 Realizing Comfortable Living Environment

1 Developing City Parks, etc. and Shaping a Good Urban Environment

(1) Status of development of city parks, etc. and approaches to upgrading them

Because city parks, etc. are key facilities laid out to fill diversified public needs, national government parks, the development of national government parks, disaster preparedness parks, etc. and the preservation of time-honored cities and green spaces have been implemented efficiently and on a planned basis, with primary emphasis on:

- ① Building a safe and secure municipality furnished with disaster preparedness parks that could serve as evacuation sites, etc.;
- ② Building safe and secure community sites to address the issues of an aging population with falling birthrates;
- ③ Preserving and shaping a good natural environment that aids in building a recycling-oriented society or addressing global environmental issues; and
- ④ Building sites for Advancing tourism that takes advantage of regional characteristics or for inter-regional exchanges or collaboration.

All areas of Bihoku Hillside National Government Park opened in April 2012 (Shobara City, Hiroshima Prefecture)



Source) Bihoku Hillside National Government Park

At the end of FY2011, city parks, etc. were maintained at 101,111 locations nationwide, covering 119,016 ha, or about 9.9m² per capita. National government parks were visited by about 31.99 million persons during the same fiscal year (one out of every four Japanese people) as they were developed and refurbished at 17 locations during FY2012.

(2) Shaping a green urban environment

The Ministry promotes urban greening and green space preservation pursuant to the Master Plan for Greenery, a basic plan on the preservation of green spaces and promotion of greening formulated by a municipality with a view to combating global warming and addressing global environmental issues, such as biodiversity, and preserving and shaping a good natural environment. The preservation of green spaces is ensured by Advancing the development of green-rich city parks and by utilizing the Special Green Conservation Areas program, which aims to protect plantation by restricting the construction of buildings, etc. or purchasing land, and the Civic Green Space System, which makes green spaces available to citizens under contract. These approaches as a whole are aided by General Grants for Social Infrastructures, etc. Inter-

Note A scheme of proactive approaches taken by residents, entrepreneurs and leaseholders to maintain and upgrade a good community environment or community value.

project partnerships with roads, rivers and more have also been advanced to shape networks of water and green. The greening of privately owned land is also promoted by using the Greening Area System, the System for Greening Rate in District Planning, etc. and more.

Other measures deployed nationwide to drive promotion and enlightenment include the sponsorship of “Green Protection” gathering, various systems to award people who are instrumental in greening and the rating and certification of corporate activities to pursue greening and preserve green spaces.

2 Advancing Road Making that Prioritizes Pedestrians and Bicycle Riders

① Forming people-oriented safe, secure walking spaces

To achieve social safety and security, it is important to form human-oriented walking spaces that assure pedestrian safety. Particularly, efforts are being directed at assuring the safety and security of school-commuting roads by refurbishing sidewalks, paving road shoulders in colors, setting up guard fences and so on to reflect results of emergency joint checkups, etc. conducted in coordination with the school authorities, the children’s guardians, the police and the like.

② Creating a safe and comfortable cycling environment

In March 2010, the bicycle passage spaces separated from automobiles and pedestrians, such as motor vehicle roads and bikeways, have only a slight total distance of about 3000 km. In addition, the present status of roads entails numerous impediments to the road traffic of bicycles as their passage is blocked by automobiles stopped or parked along the way, for example. Under the circumstances, the Ministry held meetings of a review committee jointly with the National Police Agency. The committee came up with a recommendation in April 2012. In November of the same year, the Ministry responded to the recommendation by working out Guidelines for Creating a Safe and Comfortable Cycling Environment, jointly with the National Police Agency, and promoted its dissemination to encourage regional road administrators and the like to formulate and maintain bicycle network plans and to proceed with strict adherence to traffic rules, etc. in its bid to promote the creation of a safe and comfortable cycling environment.

③ Shaping quality walking spaces

The Ministry supports the development, etc. of pedestrian roads and rest facilities by implementing a walking trail project committed to shaping a quality walking spaces that link affluence scenery and nature, historical places and so on, to promote health through walking and help build an attractive community.

④ Advancing intelligible guideboards

The Ministry is working on the installation of intelligible guideboards to guide pedestrians, etc. in an unfamiliar place to their destinations.

⑤ Building a flexible system of road administration

To implement a flexible system of road administration that provides a diversity of road functions tailored to the needs of the local residents along the way, including safe walking spaces and places of regional buoyancy and human exchanges, as well as to make motor-vehicle traffic smoother and safer, the Ministry implements:

- (a) Preferential measures, such as the construction of new sidewalks, etc. on national or prefectural highways by municipalities other than designated cities;
- (b) A system of suggesting municipalities to refurbish pedestrian safety facilities;
- (c) Preferential measures for road occupancy relating to the boulevard trees planted by NPOs or the like, street lamps and so on; and
- (d) Preferential measures for the administration of off-street convenience facilities to keep roads and roadside facilities under integrated management.

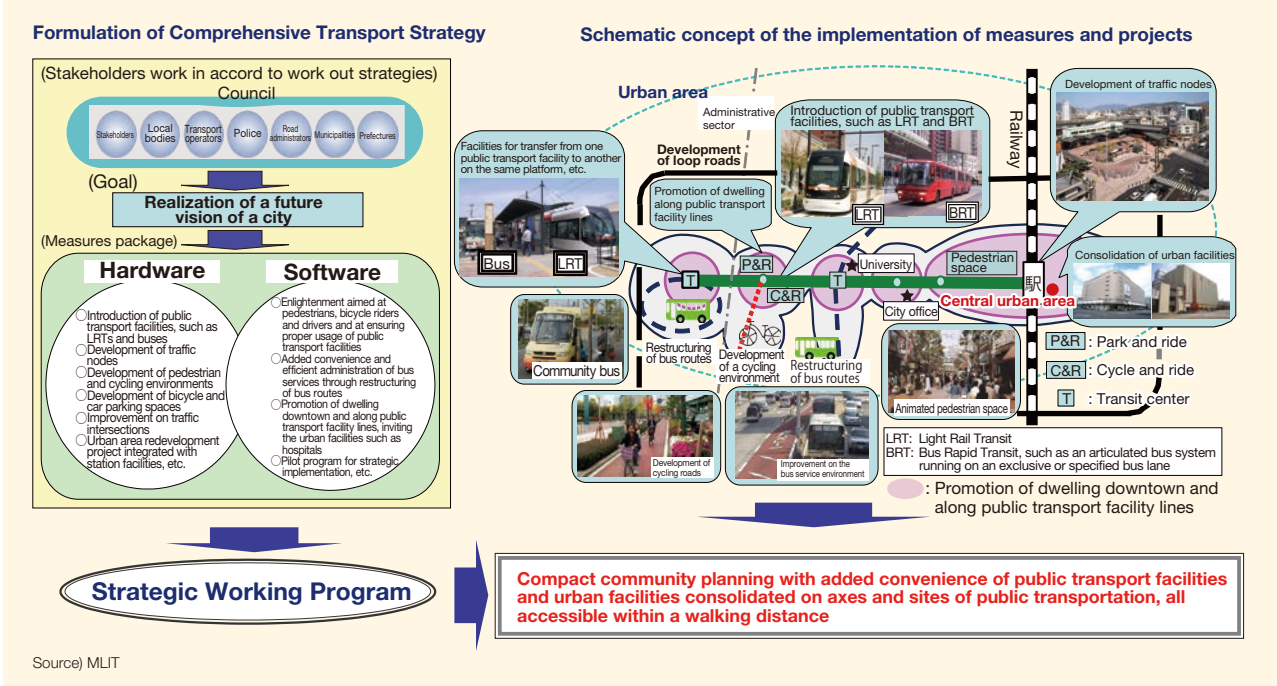
Section 3 Realizing Traffic with Enhanced Convenience

(1) Advancing implementation of comprehensive Transport Strategy

Intensive town making assured of safe, smooth traffic requires a cross-sectional approach to the available transport modes, such as bicycle, railway and bus, from users’ standpoints, rather than reviewing the transport modes or their operators individually. To this end, each local government should inaugurate a council composed of public transport operators and other stakeholders and let the council define a future vision of its cities and regions, the suite of transport

services to be made available and so on, so that it can formulate Integrated Urban/Regional Transport Strategies covering relevant traffic measures, working programs and the like (at the end of March 2013, Integrated Urban/Regional Transport Strategies had been formulated or were being formulated in 77 cities), with the stakeholders taking their respective shares of responsibility for implementing measures or projects. The national government is expected to encourage the implementation of integrated and strategic packages of traffic projects, such as the development of LRT^{Note 1} pursued according to the Strategies, and town making programs.

Graphic II-5-3-1 Example of Advancing Implementation of Comprehensive Transport Strategy



(2) Advancing TDM, etc. to mitigate traffic congestion

While the cure for solving the status of motor-vehicle traffic or road traffic jams varies from one city to another, TDM (transportation demand management)^{Note 2} offers a solution customizable to suit urban characteristics. The Ministry promotes the dissemination of integrated, effective approaches to TDM. To mitigate traffic jams that could occur during morning and evening rush hours or at any time of the day, the Ministry has put into action measures to encourage the use of public transport facilities, such as introducing bus location systems, park-and-ride^{Note 3} plans and TDM measures, such as staggered commuting, in addition to developing networks of highways and upgrading traffic capacities as by diffusing bottlenecks. Mobility management^{Note 4} has been driven in some regions, where bus route maps and leaflets are disseminated to the local residents to prompt them to review the ways they use cars and make better use of public transport facilities.

(3) Approaches to betterment of the public transport usage environment

The Ministry supports the introduction, etc. of LRT, BRT, IC cards and other less constrained systems through the implementation of regional public transport assurance, maintenance and improvement projects to accelerate the betterment of the regional public transport usage environment as part of its barrier-free community planning effort. In FY2012, light

Note 1 Short for Light Rail Transit. A next-generation rail transit system that offers excellent characteristics derived from the use of light-rail vehicles (LRV) or improvements to rails or stops, such as ease of getting on and out, punctuality, speediness and passenger comfort.

Note 2 A method of mitigating road traffic congestion at a municipal or regional level by regulating traffic demand (traffic behavior), as by varying road usage hours, routes or means, making efficient use of cars and/or adjusting the sources of congestion.

Note 3 An approach to mitigating traffic jams, whereby drivers leave (park) their cars in a suburban parking space and transfer (ride) to a public transport facility, such as a railway or bus, to get to their destination.

Note 4 A traffic policy focusing on the communications measures designed to prompt the autonomous transition of each individual's mobility (travel) in a socially acceptable direction (or preferring appropriate use of public transport facilities, bicycles and the like over excessive car usage).

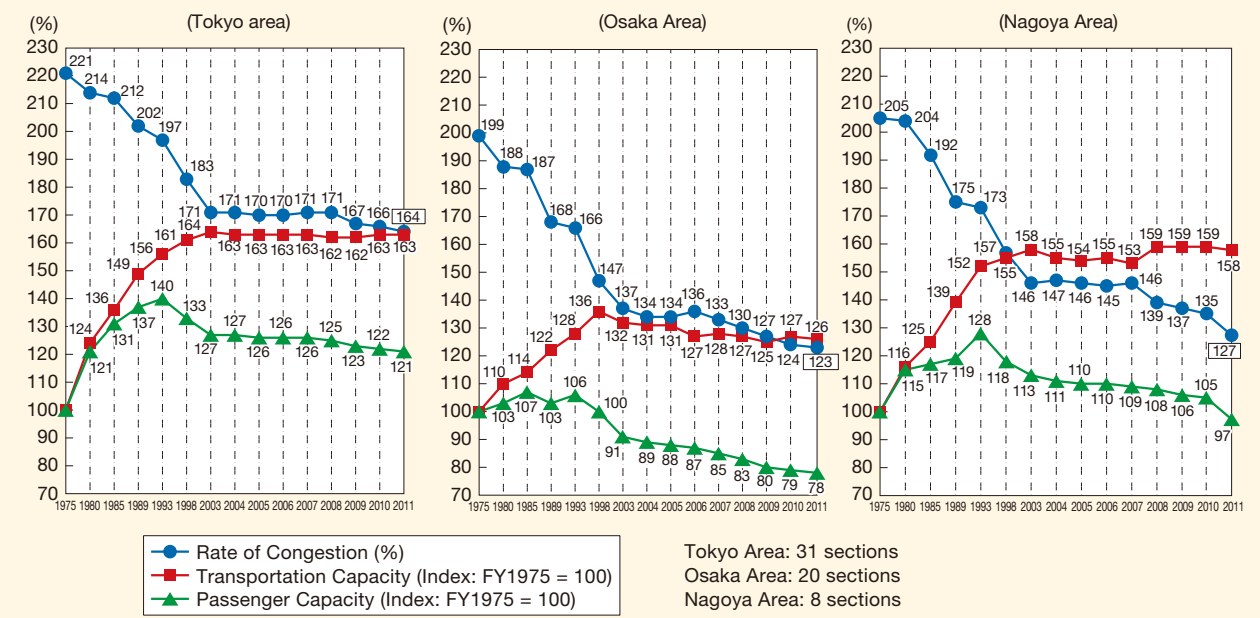
rail vehicles (LRVs) were installed by Fukui Railway Co., Ltd. and other operators.

(4) Upgrading urban railway networks

Urban railway networks have upgraded to a considerable extent to date as they had been refurbished with a primary view to building up their transportation capacities to ease traffic congestion. As a result, traffic jams in the major metropolitan areas during commuting to and from office or school are on the decline keeping in pace with the continuing trends, etc. towards an aging population with fewer births. The rate of congestion on some routes, however, remains as high as over 180% and dictates continued efforts to mitigate congestion. Efforts in progress include quadruple tracking of Odakyu Electric Railway’s Odawara Line and modifications to Tokyu’s Toyoko Line, both funded by the Designated Urban Railway Development Reserve Program.

A Sotetsu-JR through line, a Sotetsu-Tokyu through line and more have been developed by leveraging the Act on Enhancement of Convenience of Urban Railways, etc., a legislation aimed at upgrading the speediness and traffic node functions of existing urban railway networks, to further enhancements to the urban railway networks, including added user convenience.

Graphic II-5-3-2 Developments in the Average Rate of Congestion, Transportation Capacity and Passenger Capacity in Three Major Metropolitan Areas (Index: FY1975 = 100)



Source) Developed by the MLIT from: "Urban Transport Yearly Report" compiled by the Institution for Transport Policy Studies and other relevant literature.

(5) Development of urban monorails, new transport systems and LRTs

The Ministry promotes the development of LRTs, etc. to encourage users’ migration to public transport facilities from viewpoints of streamlining urban traffic flow, lightening environmental loads and reactivating central urban areas while keeping vulnerable road users assured of mobility in a period of an aging population with falling birthrates. In FY2012, a track greening project was carried out for Kagoshima Municipal Streetcars (Kagoshima City Transportation Bureau) to turf streetcar tracks to ease the heat-island effect, cut traveling noise and so on.

Track greening (Kagoshima Municipal Streetcars)



Source) Kagoshima City Transportation Bureau

(6) Augmenting the convenience of bus usage

The convenience of bus usage has been augmented not only by driving the so-called Omnibus Town Program that advances community planning around the core of bus services, but also by improving the punctuality and speediness features of bus services using a Public Transportation Priority System (PTPS), bus lanes or the like, introducing bus location systems to provide information about the location of buses in service and IC card systems to facilitate smooth getting-on and -out and so on.

(7) Leveraging and upgrading existing freeways

① Implementing diverse, flexible toll plans

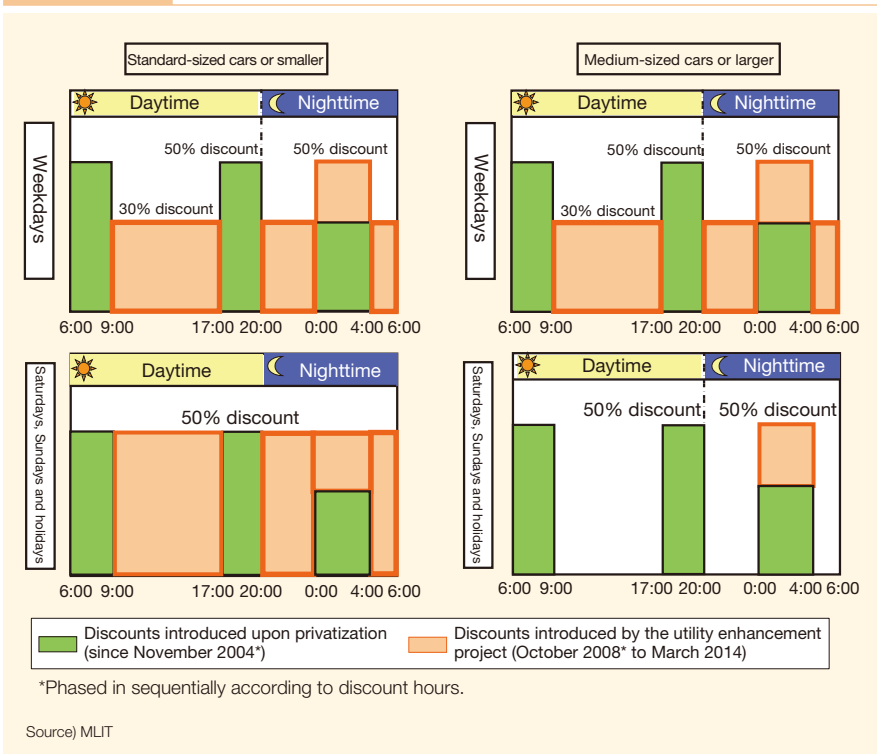
30 percent or larger toll discounts on cars taking expressways at any time of the day on weekdays and daylong 50 percent and other toll discounts on standard-sized cars taking expressways Saturdays, Sundays and holidays have been put into effect as an expressway utility enhancement project to help simplify logistics and promote regional tourism.

② Advancing the development of smart ICs

The Ministry advances the development, etc. of smart interchanges (ICs) in its effort to help revitalize regional economies and mitigate traffic congestion and other problems by making effective use of existing networks of expressways.

- Japan’s expressway ICs are spaced about 10 km apart from each other, about two times more apart than in the U.S. and European nations.
- About 50 percent of the plants having a certain scale^{Note} or larger are located within 5 km from an expressway IC.
- At present, smart ICs are in commercial service at 64 locations and under development at 30 locations (at the end of March 2013).

Graphic II-5-3-3 Current Toll Discounts and Financial Resources (Examples of Regional Divisions of NEXCO)

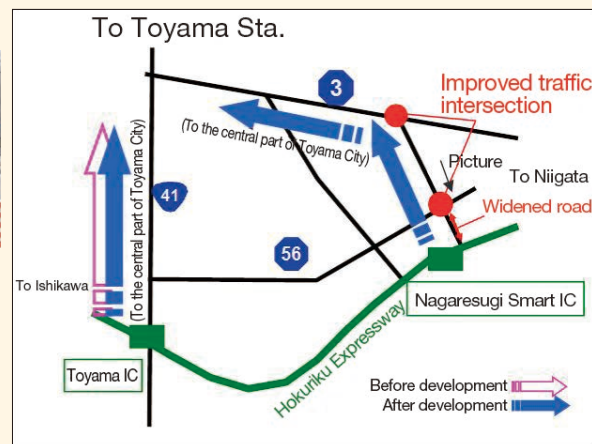


Graphic II-5-3-4 Instances of Improvement on a Neighboring Road Around a Smart IC upon Its Development

- The Nagaresugi Smart IC is a community-based IC that is frequently used during commuting hours.
- With the commissioning of the smart IC into service, the prefectural government improved upon an traffic intersection and the city widened the neighboring road, all to streamline access to and from the smart IC and the central part of the city.



Nagaresugi Smart IC
 March 29, 2008: Pilot program started
 April 1 2009: Commissioned into commercial service
 2011: About 3,100 cars of traffic a day



Source) MLIT

Note A site covering 1000 square meters or larger purchased for building a plant or lab (based on an industrial location trend survey).

Chapter 6

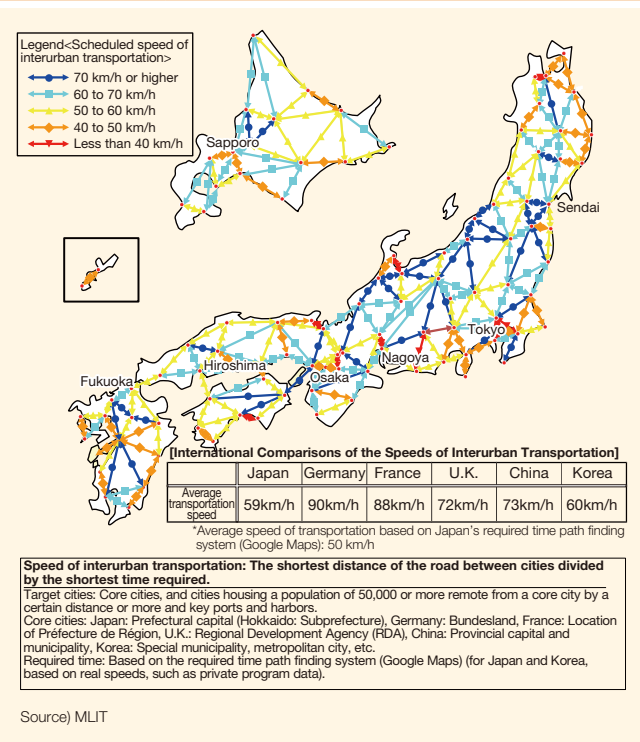
Building a Competitive Economic Society

Section 1 Developing Traffic Networks

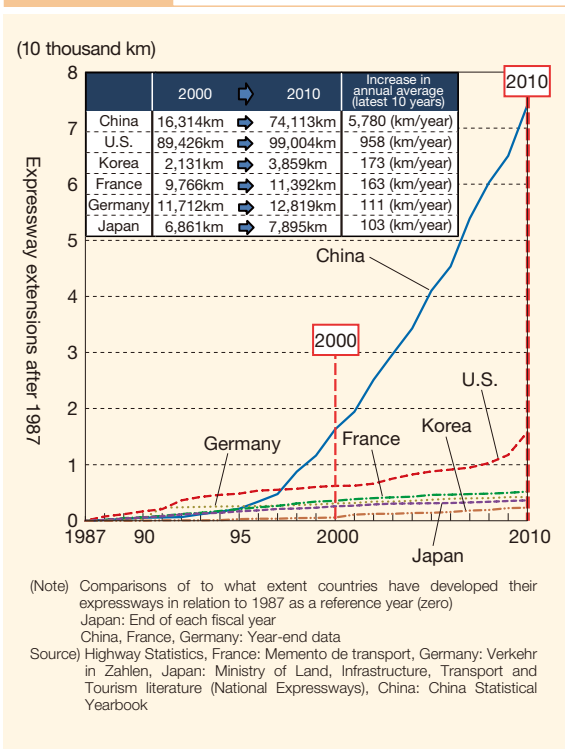
1 Developing Highways

Since the First Five-Year Road Development Plan formulated in 1954, Japanese highways have been steadily developed to date. For example, the development of a national network of highways, including expressways, has not only provided a major impetus in the rejuvenation of regional economies, as by encouraging plant location in the vicinity of expressway interchanges, but helped enhance the quality and safety of national life by making broad-area medical services accessible to rural areas, and allowing broad rerouting to avert highways disrupted by natural disasters. In the meantime, the speed of interurban transportation, an indicator of the speediness of interurban travel, tends to lag in the areas in which expressways are underdeveloped. The speediness of interurban travel remains lower as a whole than in foreign nations. Since China opened its first expressway back in 1988, 26 years later than Japan, the nation has already laid 74,113 km of expressways, at a pace 56 times higher than Japan.

Graphic II-6-1-1 Speeds of Interurban Transportation



Graphic II-6-1-2 Changes in National Expressway Extensions



2 Developing Arterial Railway Networks

(1) Development of Shinkansen railways

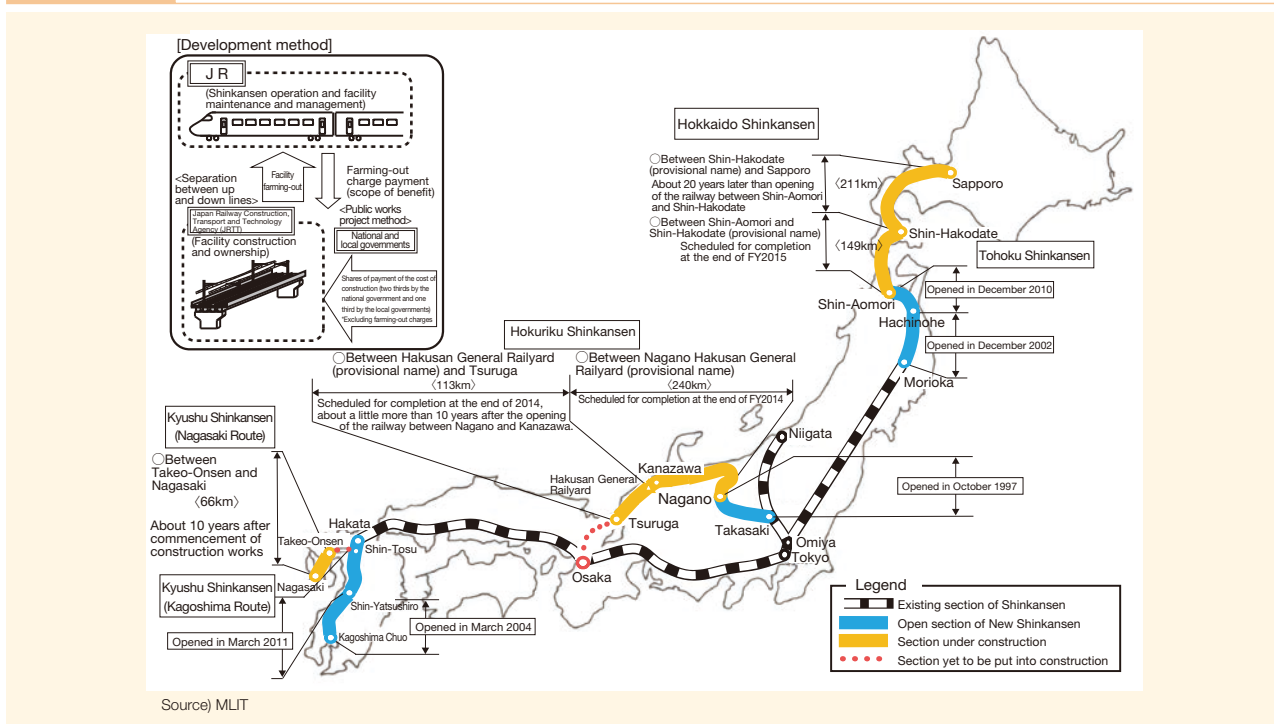
A rapid transit system of vital importance to Japan, Shinkansen significantly cuts the time spent moving from region to region and helps greatly boost regional activity and rejuvenate local economies. Shinkansen also features safety (no record of passenger death accidents since the opening of the Tokaido Shinkansen in 1964) and eco-friendliness (the railway CO₂ emissions per unit of energy (g-CO₂/passenger-kilometer being one sixth of aircraft and one ninth of

automobiles). As New Shinkansen,^{Note} Tohoku Shinkansen (between Hachinohe and Shin-Aomori) opened in December 2010 and the Kagoshima Route (between Hakata and Shin-Yatsushiro) of Kyushu Shinkansen opened in March 2011. The construction of Hokkaido Shinkansen (between Shin-Aomori and Shin-Hakodate (provisional name)) and Hokuriku Shinkansen (between Nagano and Kanazawa) is in stead construction to near completion and inauguration on time.

Pending plans to launch the construction of Hokkaido Shinkansen (between Shin-Hakodate (provisional name) and Sapporo), Hokuriku Shinkansen (between Kanazawa and Tsuruga) and the Nagasaki Route (between Takeo-Onsen and Nagasaki) of Kyushu Shinkansen were authorized on June 29, 2012 after due procedures in accordance with “Handling of New Shinkansen” (a matter confirmed between the government and ruling parties on December 26, 2011) since all the requirements for the commencement of the works were fulfilled.

The Transport Policy Council, which had debated Chuo Shinkansen since March 2010, came up with recommendations in May 2011 to affirm the appropriateness of Central Japan Railway Company as an entity of its sales and construction, the superconducting maglev method of train operation and the Southern Alps of Japan route. The Minister of Land, Infrastructure, Transport and Tourism responded to name Central Japan Railway Company as an entity of sales and construction for Chuo Shinkansen in accordance with the Nationwide Shinkansen Railway Development Act, and decided on a development program and directed Central Japan Railway Company to embark on construction. Central Japan Railway Company expects to open its Shinkansen railways between Tokyo and Nagoya in 2027 and between Nagoya and Osaka in 2045. Procedural actions pursuant to the Environmental Effect Assessment Act are underway with regard to the railway between Tokyo and Nagoya.

Graphic II-6-1-3 Present Status of New Shinkansen Development



(2) Developing existing arterial railways

To accelerate the formation of a rapid transit system that helps consolidate wide-area inter-regional linkage and boost regional activity, the Ministry seeks to speed up the existing trunk railways through improvements on the curves of railway tracks, partial double tracking and so on by making maximum use of the existing railway facilities. In FY2012, the Sassho Line (between Soen and Health Sciences University of Hokkaido) run by Hokkaido Railway Company was fully electrified and opened to speed up train service times mitigate congestion, improve the ratio of cooling installation and more.

Note Set forth in a development plan approved in 1973 pursuant to the Nationwide Shinkansen Railway Development Act.

(3) Driving technical development

① Superconducting maglev trains

Running tests for superconducting maglev trains which had been carried out on the Yamanashi Test Line since 1997. The Superconducting Magnetic Levitation Technological Practicality Evaluation Committee that met in July 2009 concluded that “the development of the technologies prerequisite to driving superconducting maglev trains to the stage of practical usefulness, including their operation as super-fast mass transit system, are in sight.” The Yamanashi Test Line is now being stretched and renewed. When the works are completed, running tests will be conducted to make a final validation of the working specifications, including rolling stock and propelling coils.

② Gauge changeable trains (Free gauge trains)

Regarding free gauge trains ready for through operation between Shinkansen and conventional railway lines, the Gauge Change Technology Evaluation Committee evaluated at its meeting in October 2011 that “technologies relating to the basic running performance of free gauge trains that recommends their practical usefulness have already been established.” The Ministry now aims to verify the durability of free gauge trains by launching three-mode durability testing, in which free gauge trains are subjected to iterative cycles of running on Shinkansen, gauge change and running on conventional railway lines by using new test stocks that are currently being designed or fabricated.

3 Developing Aviation Networks

(1) Expanding and upgrading aviation networks

① Improving metropolitan airports functionalities

MLIT is keen to improve the functionalities of the metropolitan airports as an impetus to the nation’s economic growth to bolster Japan’s international competitiveness in both arenas of business and tourism.

Starting in the 2013 summer flight schedules, Tokyo International Airport (Haneda) has expanded the number of slots for domestic flights by 20,000 to 410,000 a year (370,000 slots in daytime hours and 40,000 in late evening and early morning hours). The additional slots were allocated to airlines after having been evaluated from perspectives of forming diverse networks of regional aviation and others, citing “Contribution to the formation and enhancement of nationwide aviation networks,”

“Contribution to the formation and enhancement of air routes between Haneda Airport and regional airports” and other items.

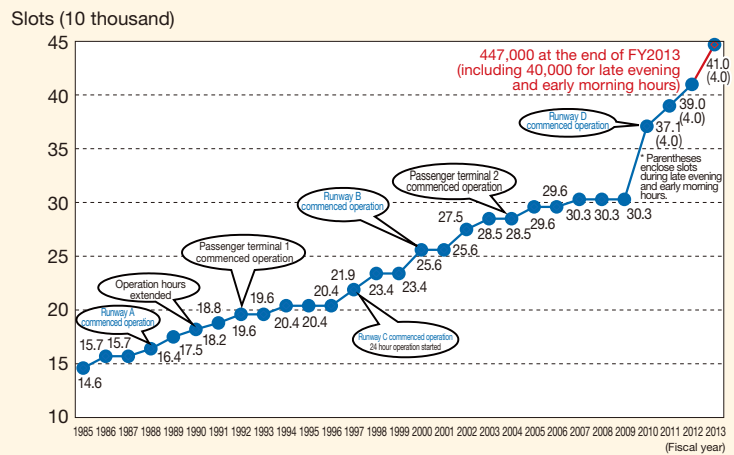
It is expected to further increase the number of slots to 447,000 (including 90,000 for international flights) from the 2014 summer flight schedules. MLIT plans to expand and improve the international flight district to accommodate 90,000 international flights, to develop aprons and other facilities to accommodate 447,000 slots, and to stretch Runway C which is necessary for increasing the transport capacities of long-haul international flights. Through these measures and with high-demand and business routes, such as long haul Asian, European and U.S. flights, available during daytime hours, it is planned to accommodate the strong air

Graphic II-6-1-4 Major Development Projects at Tokyo International Airport (Haneda)



Source) MLIT

Graphic II-6-1-5 Number of Available Slots at Tokyo International Airport (Haneda) (during Daytime Hours)



Source) MLIT

transport demand in the Tokyo metropolitan area and to reinforce its domestic and international hub function of the metropolitan airports by leveraging its rich domestic networks.

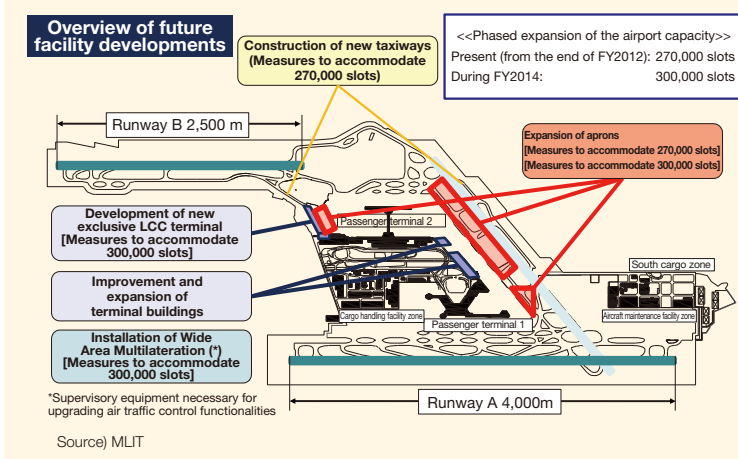
The yearly number of slots at Narita International Airport was expanded up to 270,000 as of the end of FY2012 and the airport realized the Open Sky, with the taxiway on the west side of Runway B and the Yokobori District Apron commenced operation in March 2013.

As the main international airport to accommodate the strong international air transport demand of the Tokyo metropolitan area, Narita International Airport plans to expand the number of slots up to 300,000 by the end of FY2014, with the consent of local residents, by installing an advanced air traffic control system to streamline the simultaneous parallel independent departure. Narita International Airport is intended to take the position as a major hub airport in Asia by enhancing up the international aviation network mainly through implementation of the Open Sky and by developing exclusive terminals for LCCs^{Note 1} and business aviations, in addition to reinforcing the domestic and international passenger transfer functions through expanded and improved domestic feeder routes.

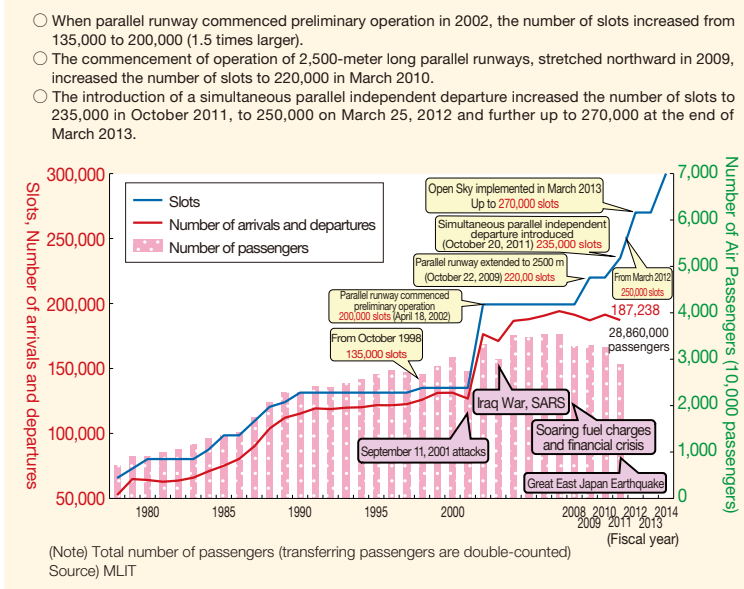
② Driving the Open Sky strategically

Since 2007, the Ministry has pursued the Open Sky,^{Note 2} except for the metropolitan airports with tight airport capacities, to respond to changes in the competitive environment resulting from the global trends towards aircraft deregulation while accommodating vigorous economic leaps in Asian and other overseas nations. Since a deal was reached with local residents on increases in the arrival/departure capacities at Narita International Airport in October 2010, along with a globalized Haneda Airport, by December 2012, the scope of the Open Sky was expanded to metropolitan airports and agreements were reached on a total of 23 countries and regions^{Note 3} – the U.S., Korea, Singapore, Malaysia, Hong Kong, Vietnam, Macau, Indonesia, Canada, Australia, Brunei, Taiwan, the U.K., New Zealand, Sri Lanka, Finland, France, China, the Netherlands, Sweden, Denmark, Norway and Thailand.

Graphic II-6-1-6 Overview of Facilities at Narita International Airport



Graphic II-6-1-7 Number of Arrivals and Departures at Narita International Airport



Note 1 Low Cost Carrier

Note 2 The Open Sky is a bilateral commitment to mutually lifting constraints on the number of business enterprises in play in international air transportation, that of routes and that of flights to upgrade the service levels, such as lowering airfares, by encouraging the entry of new airlines, increases in flight frequency and competition among airlines. Many nations pursue this initiative in recent years.

Note 3 The number of passengers flying to and from these 23 countries and regions account for about 91% of the total number of passengers arriving and departing from Japan

③ Encouraging the entry of LCCs

An LCC originating from Japan, Peach Aviation went into service in March 2012; Jetstar Japan Co., Ltd. followed suit in July of the same year and AirAsia Japan Co., Ltd. did so in August.

The entry of these LCCs is expected to create new demand by encouraging more foreign tourists to visit Japan than before, expanding the sphere of domestic tourism and so on. The Comprehensive Strategy for the Rebirth of Japan (approved at a Cabinet meeting on July 31, 2012) pledges to “elevate the underlying demand for aviation by stimulating new demand to expand the presence of LCCs in domestic and foreign air travelers transportation to equal the U.S. and Europe (about 20 to 30%) by 2020.”

Two major measures have been taken in Japan to facilitate the entry of LCCs.

The first is to review the way technical regulations relevant to safety should be. The way technical regulations (laws, notifications and administration) relevant to aviation safety should be was reviewed with advancements in aviation technology, governing international standards, etc. taken into account from viewpoints of responding to a new form of business operation that addresses evolving in aviation technology and user needs, in line with the Ministry of Land, Infrastructure, Transport and Tourism Growth Strategy (May 2010). More specifically, responses to 100 out of 120 items of requests, such as refueling with passengers on board and skill testing by way of simulations, were decided. It is expected to add to user convenience, simplify the flow of business operation, contribute to recruiting and developing of human resources, and cut costs to, opening a way for the entry of more LCCs.

The second is the development of an LCC terminal, etc. Japan’s first LCC terminal (Second Terminal) came into service on October 28, 2012. At Narita International Airport, interim LCC reception facilities were constructed on the southern and northern sides of the existing Second Passenger Terminal, which came into service on September 12 and October 23 of the same year, respectively. In addition, the development of an LCC terminal is in progress for completion within FY2014. At Naha Airport, an interim LCC terminal built by leveraging an existing facility came into service on October 18, 2012. An LCC terminal made available for a cost lower than an existing terminal and other environmental prerequisites in place could accelerate the inauguration of LCC services.

④ Accelerating the reception of business aviations

A business jet is a small aircraft with the capacity to hold a few to more than a dozen passengers at the most. Business aviations are typically used by businesspersons valuing time because they are able adjust times according to their schedules or utilize the plane as a secure space to carry on business meetings and such on board.

Business aviations have become a means of global corporate activity in the U.S. and Europe. As Japan’s economy goes on global, the need to attract investment from overseas is beginning to win wider recognition than before, instead of conducting a one-sided exchanges, such as building a plant overseas. Hence, the importance and potentials of business aviations in Japan will grow from a viewpoint of consolidating economic growths in the Asian regions from now on.

Comparisons of the status of business jet ownership by country, however, show that only 62 business aviations are registered in Japan (in 2011), against the largest owner U.S. with about 1,900 business aviations registered in the same

Graphic II-6-1-8 Summary of Japan’s LCCs

Company name	Peach Aviation	AirAsia Japan Co., Ltd.	Jetstar Japan Co., Ltd.
Capital (including reserve funds)	15 billion yen ANA 38.7% First Eastern-Aviation Holding Limited 33.3% Innovation Network Corporation of Japan 28.0%	2.5 billion yen (capital to be sequentially raised up to 5 billion yen) ANA 67% AirAsia 33%	9.6 billion yen (capital to be sequentially raised up to 12 billion yen) Qantas Group 33.3% JAL 33.3% Mitsubishi Corp. 16.7% Tokyo Century Leasing Corp. 16.7%
Core airport	Kansai International Airport	Narita International Airport	Narita International Airport
Equipment used	Airbus Model A320-200	Airbus Model A320-200	Airbus Model A320-200
Service route	Domestic) Kansai = Sapporo, Fukuoka (March 1, 2012) Kansai = Nagasaki (March 25, 2012) Kansai = Kagoshima (April 1, 2012) Kansai = Naha (October 18, 2012) International) Kansai = Incheon (May 8, 2012) Hong Kong (July 1) Taipei (October 16)	Domestic) Narita = Sapporo, Fukuoka (August 1, 2012) Narita = Naha (August 3, 2012) International) Narita = Incheon (October 28, 2012) Narita = Pusan (November 28, 2012)	Domestic) Narita = Sapporo, Fukuoka (July 3, 2012) Narita = Naha (July 9, 2012) Kansai = Sapporo, Fukuoka (August 24, 2012) Kansai = Naha (October 28, 2012) International) Short-haul international flights to China, Korea or elsewhere scheduled (during 2013)

(Source) MLIT

year. Business aviations are, thus, yet to be popular in Japan.

In an effort to accelerate the reception of business aviations, Japan has conditioned the relevant environment, mainly at Narita International Airport, and eased regulations pertaining to business aviations.

A business jet terminal furnished with CIQ facilities and having a privacy-enabled traffic line initiated service at Narita International Airport on March 31, 2012. Since April of the same year, the online filing of applications for arrival and departure slots and parking spots has been supported.

The Ministry will consider phasing in measures designed to accelerate the reception of business aviations at the airports nationwide, as they are practicable, with reference to the measures taken at Narita International Airport while exploring measures to consolidate the usage of business aviations, such as disseminating information proactively and easing regulations relevant to business aviations.

⑤ Present status of airport development

(a) Development of general airports, etc.

Emphasis has been shifted to achieving qualitative enhancement to general airports, etc. mainly by implementing mixes of hardware and software measures and leveraging existing airports. New projects relating to the construction of new runways and extension of existing runways will be translated into operation only if they are truly needed. The runway at New Ishigaki Airport was relocated and stretched in FY2012. At the same time, existing airports were renewed or improved to preserve their functionalities. At Naha Airport, an environmental assessment was conducted on the proposed construction of an additional runway located 1310 m to the shore from the current runway to make a drastic enhancement to its capacity. At Fukuoka Airport, plans to add to runways within its present premises have been debated with regard to a specific facility layout or other issues, on the basis of findings of a comprehensive survey conducted.

(b) Upgrading the functionalities of airports, etc.

The work of upgrading the functionalities of airports, etc. by leveraging existing stocks to overhaul airspaces and air routes has been promoted to enhance international competitiveness and the regional competitiveness of the airport backland areas.

(2) Development and optimization of airport operation

① Realizing concessions related to Kansai International Airport and Osaka International Airport

On July 1, 2012, Kansai International Airport and Osaka International Airport merged into a New Kansai International Airport Co., Ltd. with a view to rejuvenating and reinforcing Kansai International Airport as an international core airport and expanding the demand for air transportation in the Kansai district through appropriate and effective utilization of the two airports. The newborn company aims to put measures into positive action, such as broadening a network of passengers to cover LCCs and other airliners, etc. and transforming into a cargo hub airport, and also to augment the corporate value of these two airports to set Rights to Operate Public Facility etc. (concession-based PFI project) at the earliest possible opportunity.

② Driving airport management reforms

In recognition of the role of government-owned airports etc. to support the future growth of Japan, it will be important to rejuvenate regional activity by increasing inflow and outflow of population, etc. through the utilization of these airports. Depending on regional conditions, it is preferable to integrate aeronautical and non-aeronautical service in airports to build efficient airport operation by private sector.

From this viewpoint, a bill designed to authorize private operation of government-owned airports etc. on the support of the PFI was submitted to the 183rd ordinary session of the Diet in April 2013. Once the bill is enacted, concrete approaches to realizing airport-specific management reforms will be worked out promptly with views of the local governments concerned taken into consideration.

(3) Developing air traffic system

① Building a new air traffic system

While continuing leaps in the demand for air traffic are predicted and responses to diversified needs are sought, long-term plans on the development of a globally interoperable system of air traffic management (ATM) is under study by the International Civil Aviation Organization (ICAO) and also in the U.S. and Europe. In Japan as well, a long-term vision of the futures of an air traffic system, as early as 2025, was formulated as CARATS. ^{Note} CARATS is built to achieve the core goal of reforming into a highly integrated system air traffic management that optimizes the paths of aircraft from departure to arrival. A roadmap to its realization is now ready and under review. In FY2012, plans to phase in the specific measures defined in the roadmap, indicators that represent the status of achievement of the goals of CARATS, etc. were reviewed in collaboration among industry, academia and government.

Specifically, the possible installation and deployment of high level area navigation (RNAV) and RNAV for smaller aircraft have been debated to help cut flight hours and fuel charges by shortening flight routes and to achieve further increases in the rate of airport inauguration through improved flight and other conditions. Measures have also been weighed to mitigate congestion of aircraft flying towards an airport as they meet at a junction, including timed sequencing of aircraft and their interval setting, to predict the extent of wake turbulences arising from prior aircraft to help narrow traffic control intervals, release topological and obstacle information to avoid collusion and upgrading aviation weather observation information, etc. to ease flight conditions, etc.

② Addressing growing metropolitan airport capacities

A totally new method of aircraft operation designed to upgrade air traffic services amid growing metropolitan airport and airspace capacities has been introduced at Tokyo International Airport (Haneda) since October 2010. According to this method, four runways arranged in double crosses are in service and an aircraft is guided to depart or arrive on one runway while aircraft do so on the other runways. Familiarization with this method of aircraft operation will be pursued steadily to achieve a yearly capacity of 447,000 arrivals/departures.

At Narita International Airport as well, the globally rare multiparallel takeoff method has been introduced since October 2011 in an effort to realize a yearly capacity of 300,000 arrivals/departures with the two runways currently in service, without risking increases in the noise-impacted zone. Again, familiarization with this method of aircraft operation will be steadily proceed with.

(4) Strategic promotion of international aviation measures

International activities in the aviation field are many and diverse, ranging from air talks, through safety and security, to air traffic control. According to estimates compiled by the International Civil Aviation Organization (ICAO), air passenger traffic is predicted to grow on an annual average of 5.8% over a 20-year period from 2005, with primary impetus from the Asian and Pacific regions, which are expected to grow into the world's largest aviation market in 2025. The ICAO also calculates that a sum of 120 billion dollars (9.84 trillion yen: 82 yen/dollar) will be spent worldwide renovating the air traffic systems, a vital tool of international air transportation, for the next 10 years. It would be important for Japan, located in the promising Asian and Pacific regions, to seek broader presence in the ICAO while proactively responding to leaps in these regions.

Under such circumstances, the International Aviation Strategy Headquarters were inaugurated as part of the Japan Civil Aviation Bureau on July 1, 2012 to drive the strategic and organized implementation of international aviation measures, including those aimed at globally deploying software and hardware infrastructures in the aviation field, such as airport infrastructures and air traffic control systems in which Japan has strengths, staging marketing activities in a joint effort of the public and private sectors, such as hosting public-private seminars in the partner countries, such as Myanmar, and arranging for tours of domestic airport facilities. These and other efforts will be further improved and expanded through collaboration between the public and private sectors.

Note Collaborative Actions for Renovation of Air Traffic Systems

4 Facilitating Traffic Access to Airports

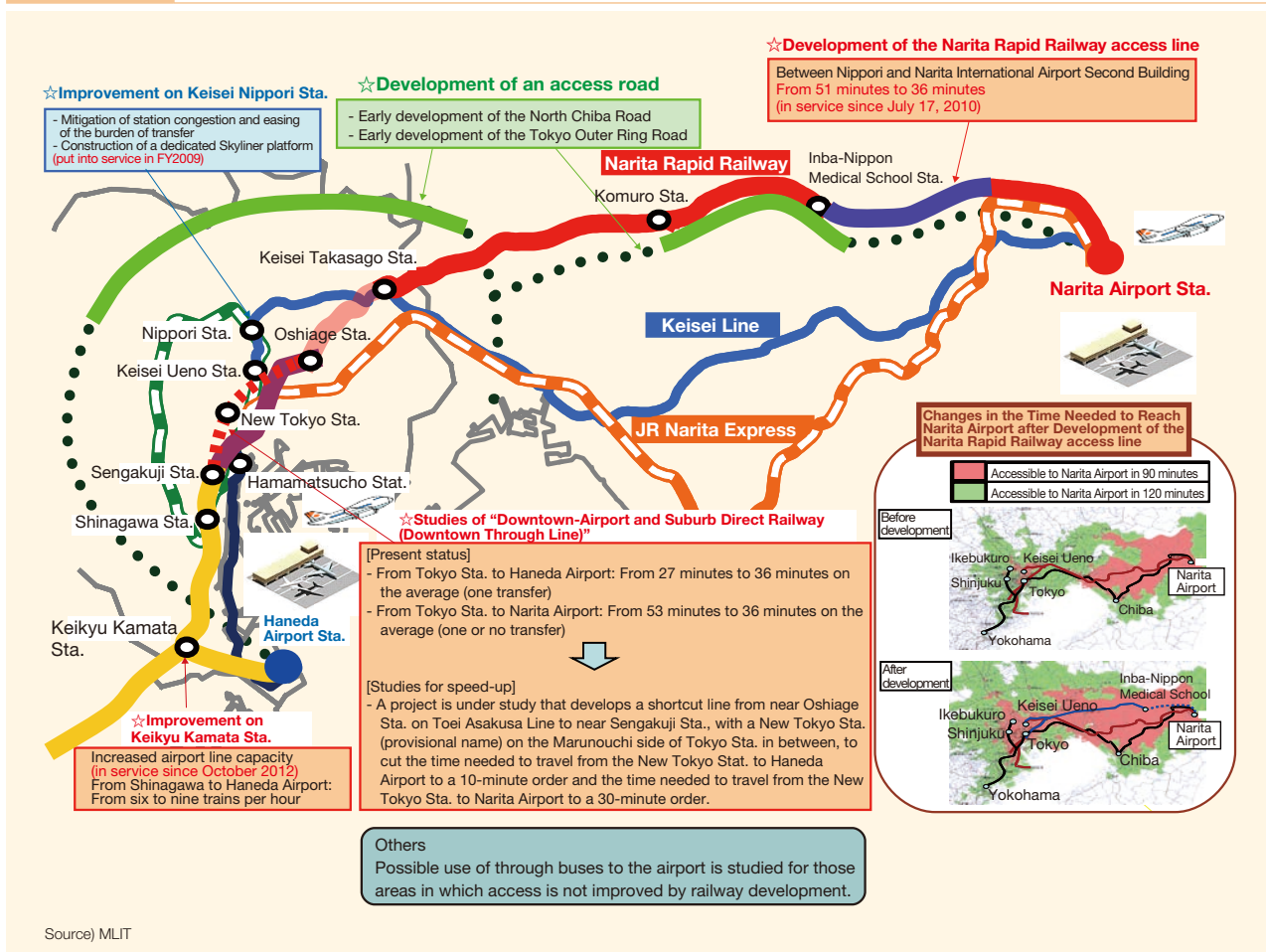
The world's major airports (London, Paris, Hong Kong and else) are located within a railway reach of about 30 minutes from downtown. In contrast, Japan's Narita International Airport used to take about a 50-minute train ride to reach from downtown Tokyo. With the opening of the Narita Rapid Transit Railway Access Line in July 2010, which connects Hokusai Railway trains to Narita International Airport, the time required to travel from downtown Tokyo was reduced to around 30 minutes. In parallel with this, Keisei Electric Railway Nippori Station was improved to augment the convenience of transferring passengers.

To reinforce car access to the airport, the development of an expressway network has been driven, including the development of the area on the eastern side of the Tokyo Outer Ring Road. An improvement to Keikyū Kamata Station completed in October 2012 boosted the capacity of the Keikyū Kamata Line, reinforcing railway access to Tokyo International Airport (Haneda), coupled with the addition of extra through lines from Shinagawa and Yokohama.

Furthermore, a project that connects downtown Tokyo directly to Tokyo Metropolitan Airport (Haneda) and Narita International Airport and that connects downtown Tokyo directly to suburban areas has been studied and pursued as a "Downtown Tokyo-to-Suburban-Area Through Railway (Downtown Tokyo Through Line)" project from a viewpoint of reinforcing the international competitiveness of the Tokyo metropolitan district.

In addition, ways to improve access to Kansai International Airport have been surveyed and explored.

Graphic II-6-1-9 Bolstering Traffic Access to Metropolitan Airports



Source) MLIT

Section 2 Implementing Comprehensive and Integrated Logistics Policies

Pursuant to the “Integrated Logistics Master Plan (2009-2013)” formulated in July 2009 to promptly and precisely address variable logistic conditions, such as deepening global supply chains and increased need to take actions to combat global warming, Japan has been advancing the implementation of comprehensive, integrated packages of logistics policies. A next version of the Master Plan is now under review as the original plan reaches its target year of 2013.

1 Implementing Logistics Policies to Correspond with Deepening Global Supply Chains

To keep up with deepening global supply chains, efforts directed at reinforcing Japan’s international logistic functions are under way, including driving overseas deployment of the nation’s logistic systems.

(1) Promoting the overseas deployment of Japanese logistics systems

Amid accelerating advances of Japanese industries into Asian regions, the availability of high-quality logistics services, like those being deployed by domestic physical distributors in Japan, is being sought for international physical distribution in the Asian nations. While the need for Japanese physical distributors to expand overseas thus mounts, some problems need to be resolved, including institutional constraints placed in the partner countries, before high-quality logistics systems, in which Japanese physical distributors have strengths, can be deployed in the Asian nations. For this reason, the Ministry will promote an understanding of Japan’s logistics system and its implementation by holding dialogs with the partner countries, etc. and also seek to refurbish the logistics environment, as by improving on institutional systems.

(2) Strengthening capabilities of the international maritime transport network

As the globalization of economy progresses, the volume of international marine transportation continues to grow year to year. From the perspective of optimizing maritime transportation through large bundle shipments, container and bulk freight liners continue to grow in size. In the meantime, key Asian ports have successfully increased their volumes of freight handling, resulting in concentrated ports of call, with U.S. and European key sea routes making fewer calls at Japan. Further, slow responses to larger vessels to carry bulk cargo^{Note} raise concerns over diminishing competitiveness in domestic industries forced into a mutually disadvantageous business environment.

In light of such conditions, Japan carries on its effort to streamline the flow of physical distribution that supports economic activity in Japan and life of citizens, thus boosting the competitiveness of the shipping entities at their location at home, which would in turn augment Japan’s industrial competitiveness and realize economic reconstruction by maintaining and expanding the calls of U.S. and European key routes at Japanese ports and simplifying and stabilizing imports of lifeblood materials, such as resources and energies.

In parallel with these approaches, efforts to shape an efficient network of maritime transportation in which international and domestic transport services are integrated will be carried on, and relevant measures will be enhanced and developed at a deeper level.

① Enhancing the functionalities of strategic international container ports

To support Japanese industrial activities and the life of citizens in terms of logistics, the key international routes of marine container distribution that link Japan to North America, Europe and else need to be maintained with stability and even expanded.

However, since the port costs have been further reduced at New Pusan Port, which was commissioned into service in February, 2006, and other ports, the number of times key European and U.S. routes call at Japanese ports remain on the decline and are yet to be maintained and expanded.

Note A generic term covering the kinds of cargo that are shipped without being packaged, such as grains, iron ore, coal, oil and timber.

Further, the ratio of overseas transshipment^{Note 1} remains on the rise, though recently at a slower pace of growth than before. With the commissioning of New Pusan Port and other ports into service, the status of international marine container distribution surrounding Japan has toughened further, urging a drastic imminent solution to bolster international competitiveness for Japan's ports and harbors.

In the circumstances, a decision came in August 2010 to maintain and broaden the key international sea routes that link Japan to North America, Europe and elsewhere, and Hanshin Port and Keihin Port were selected as strategic international container ports. An integrated hardware and software package of measures, involving the development of container terminals and other infrastructures, concentration of freight and privatization of port management, has been put into action at these ports to upgrade their functionalities.

Based on the Port and Harbor Act amended in 2011, one special port operating company was specified for Hanshin Port in October 2012 and for Yokohama Port in December of the same year, respectively. At other strategic international ports and international core ports as well, port operating companies will be appointed in the future to help streamline the flow of port administration.

② Forming a resource and energy efficient network of maritime transportation (Enhancement to the functionalities of strategic international bulk ports)

In a globally tight supply and demand climate for resources, energies and so on, importing these materials with stability and at low cost has become an pressing issue for Japan, because the nation depends on imports for virtually all of her requirements for these materials.

While bulk freight liners continue to grow in size in the world and the development of port and harbor facilities to accept these cargo liners is in progress in the neighboring nations, a greater proportion of Japan's port and harbor facilities fail to catch up with globally larger cargo liner sizes. Further, while Japan holds large demand for resources, energies and so on as a nation, the domestic demand is scattered into smaller units of imports among individual operators, so that ships made larger in size would be hardly advantageous to them.

For this reason, the allocation of large-vessel-ready port and harbor facilities as core sites and inter-business collaboration will be accelerated to shape an efficient national network of marine transportation focusing on strategic international bulk ports, thereby realizing stable, less costly imports to build up Japan's industrial competitiveness, create employment and checking the outflow of income.

③ Building functionally core ports on the Japan Sea

Among the ports and harbors located on the Japan Sea that geographically close to the countries across the sea following a rapid pace of economic growth, core ports were selected in November 2011 in an effort to assimilate economic leaps in the countries on the opposite shore into Japan's growth through the selection of relevant functionalities and concentration of measures and also through linkage between the ports and to build a disaster-proof logistics network.

The Review Committee on the Formation of Core Ports on the Japan Sea will meet continuously from now on to follow up the progress of the plans, etc. submitted by the port administrators.

④ Upgrading port and harbor procedures

The Ministry is working to improve the convenience of fulfilling the port and harbor procedures upon entry into and departure from ports, in time for the upcoming renewal of the single-window system.

⑤ Enhanced functionalities of international ports and harbors

To address increasingly sophisticated and diversified needs for East Asian logistics, which is not much different from domestic logistics in both terms of timing and distance and build a low-cost logistics system, the Ministry pushes ahead with functional enhancements to unit loading terminals^{Note 2} and with the development of facilities that simply the flow of cargo transshipment. To catch up with rising volumes of container and bulk freights, the Ministry also promotes the

Note 1 Of all container cargoes arriving at and departing from Japan, the ratio of the volume of those container cargoes that are transhipped at key ports in Asia or elsewhere for transportation to or from another country, to the entire volume of container cargoes.

Note 2 A terminal that supports a scheme of transportation under which cargoes are loaded and unloaded in bulks in chasses, containers or the like (unitization) to enhance the speed and efficiency of physical distribution.

construction of international marine container terminals and international physical distribution terminals in an international marine transportation network or at regional core ports and harbors, plus approaches designed accelerate the implementation of ICTs and otherwise add to user convenience.

⑥ Developing a maritime transportation environment

Among all international trunk routes, those that could interfere with navigation in the bay because of shallow waters, etc. have been improved and Aids to Navigation have been renovated to develop a maritime transportation environment that combines the safety of maritime traffic with the efficiency of maritime transportation.

(3) Developing advanced aviation logistics functions to pursue increased international competitiveness

In recognition of the sluggish growth of Japan's international airfreight transportation business under the influence of domestic businesses seeking relocation overseas, the recent European sovereign debt crisis, a rising yen and so on, the Ministry has been driving efforts to turn Japan's core airports, such as Kansai International Airport and Chubu Centrair International Airport, into freight hubs and streamlining the transport process, as well as upgrade the capacities and functionalities of metropolitan airports, to take freight arriving at and departing from Asian nations, which promises further leaps.

(4) Strategic development and utilization of a logistically important road network

Building an efficient logistics network is of prime importance in the scheme of motor truck transportation that commands about 80% of total domestic transportation. Out of this recognition, the Ministry has pushed forward with the development of high-standard highways that interconnect major cities with one another, metropolitan ring roads, airport and port access roads and more. At the same time, it seeks to build a network of roads accessible to international marine container cars without needing transshipment. Efforts are also underway to utilize and upgrade existing road networks, including the construction of smart ICs.

(5) Other measures that help reinforce international physical distribution functions

While the urgent formation of a logistics in which international logistics is efficiently combined with the domestic transport modes of land, sea and air is sought, the realization of the mutual passage of chasses (trailing trucks without a drive power) to and from Korea and China and the use of a sea & rail scheme under which marine transportation is coupled with railway transportation are propelled.

2 Measures Aimed at Building an Efficient Logistics System at Home

In addition to the approaches mentioned in 1, additional approaches are underway to build an efficient logistics system at home to toughen Japan's industrial competitiveness while easing environmental loads.

(1) Streamlining the flow of interregional physical distribution

The Ministry proceeds to build up freight transport capacities and develop nodal points of physical distribution, such as ports and freight stations, to drive combined multimodal transportation. In March 2013, the construction of new Suita Freight Terminal Station completed, along with an improvement on Kudara Station and an enhancement to the railway freight transport capacity at Sumidagawa Station, as part of the effort to build up railway transport capacities by introducing longer container trains and additional train services. In addition, the development of combined multimodal transport terminals is under way at Hakata Port and Elsewhere to consolidate coordination between marine transportation and other transport modes. Key road networks will also be refurbished to streamline the flow of truck transportation.

(2) Streamlining the flow of inner-city physical distribution

Suburban areas designed for physical distribution^{Note 1} had been developed in 22 cities and 29 locations (27 of which are already in service) by March 2013 in accordance with the Act on the Improvement of Urban Distribution Centers to enhance the urban functions of logistics and streamline road traffic through intensive location of distribution facilities.

To prevent roadside parking for cargo handling, the Ministry has encouraged local governments to include the installation of parking spaces for cargo handling in their municipal parking ordinances. As of the end of March 2012, municipal ordinances were amended in 88 cities to dictate the installation of parking spaces for cargo handling at commercial installations having a certain scale or larger.

Measures that have been taken to streamline traffic flow include intensive actions directed at congestion bottlenecks, multi-layerization of traffic intersection and resolution of railway crossings nearly closed at all times. In parallel, software measures, such as those aimed at driving joint transportation and delivery pursuant to the Low Carbon City Promotion Act and encouraging migration the use of private trucks to the use of commercial trucks^{Note 2} to boost load efficient, have been driven.

(3) Further efforts to implement logistic services that are more sophisticated and that deliver better total efficiency

To accelerate the implementation of the 3PL business^{Note 3} further, the Ministry not only arranges for the environment in which physical distributors find it easier to make inroads into the 3PL business easier, by hosting human resources development and training sessions, publicizing regional business models and so on, but also seeks to generalize and simplify the flow of physical distribution through a system of accreditation for total efficiency plans^{Note 4} in accordance with the Act on the Improvement of Urban Distribution Centers. As of the end of March 2013, 184 total efficiency plans were accredited in accordance with the Act.

Section 3 Reactivating Industries

1 Trends in Railway Industries and Measures

(1) Railway business

① Trends and measures in the railway business

The number of railway passengers carried in FY2011 moved crabwise from its year earlier level. At Japan Railway, transportation on Shinkansen increased while transportation on conventional railway lines transitioned sideways, with transportation on private railways on the decrease.

The volume of railway freight transportation for FY2011 slipped in both annual tonnage and ton-kilometers under the influence of suspended production in the manufacturing businesses hit by the Great East Japan Earthquake and disrupted routes of transportation.

In the circumstances, each railway operator pursues to create a comfortable and safe railways space in its own way, for example, by promoting a numbering plan in which letters and numerals are written side by side in route and station names. In the wake of East Japan Railway Company's IC card, Suica, inaugurated in 2001, commuting IC cards have been introduced in succession, such that starting March 23, 2013, a total of 10 kinds of IC card tickets issued by five companies of Japan Railway and five major private railways in the Tokyo metropolitan, Nagoya, Kinki and Kyushu areas will be made interoperable, promising a further boost in the user convenience.

Note 1 A large-scale urban distribution center intensively equipped with distribution facilities, such as truck terminals and warehouses, which is conveniently located for ready access to an expressway interchange, for example.

Note 2 To convert from transportation by private trucks (private cargo-carrying trucks) to transportation by commercial trucks (trucks carrying cargoes for charges on demand from others), or those transporting mixed cargoes from multiple cargo owners to achieve better transport efficiency and thus to cut the cost of transportation.

Note 3 Third-party logistics: A service that undertakes a fully integrated package of logistics from cargo owners.

Note 4 A scheme of logistics integration and simplification, plus concentration of transport networks and sharing of transport and delivery, built around the core of distribution facilities located in the vicinity of social infrastructures, such as expressway ICs and ports and harbors, including automated racks and data processing systems.

② Initiatives towards the complete privatization of Japan Railways

The individual companies of Japan Railways incorporated upon breakup and privatization of Japan National Railways in April 1987 have carried on their respective management efforts to meet their own regional conditions and management climates over the following more than 25 years. In the meantime, East Japan Railway Company, Central Japan Railway Company and West Japan Railway Company were completely privatized when the sale of the capital holdings of Japan Railway Construction, Transport and Technology Agency (JRJT) completed, but measures have been taken for the time being to keep the Japan Railways companies in mutual partnership and collaboration, assure user convenience, care for smaller enterprises and so on in consideration of the background of the Japan Railways reform.

Hokkaido Railway Company, Shikoku Railway Company, Kyushu Railway Company and Japan Freight Railway Company, on the other hand, carry on their respective efforts to increase revenues and cut costs. In the light of the social significance of the roles these companies play, such as securing means of local transportation and driving railway freight transportation having low environmental loads, necessary aids have been extended to them to reinforce their management structure and thus make them economically viable by leveraging funds from the JRJT Special Services Account since FY2011 in accordance with the Act on Treatment of Debt, etc. of JNR Settlement Corporation, in addition to the fixed property tax breaks already in effect.

(2) Railway vehicle industry

The volumes of newly built railway vehicles and railway vehicle components (such as power generators and carriages) by value moved flatwise for domestic shipment and varied depending on the status of orders for overseas shipment. In FY2011, a 177.8 billion worth of 1,807 new vehicles was manufactured, when compared with a 272 billion yen worth of railway vehicle components. Newly built passenger vehicles

By component ratio, newly built railway vehicles manufactured commanded 96.3% by value for domestic shipment and 3.7% for overseas shipment, down 11.0% and 69.6%, respectively, from FY2010.

They were bound for the U.S., Taiwan and Egypt. Railway vehicle builders are working in coordination with railway operators to develop vehicles that fill various social needs, such as speed, safety and passenger comfort, plus lower noise and barrier-free design. Vehicle builders also pursue cost reductions by removing manual labor from design work and propelling the widespread use of standard parts with reference to Guidelines for the Standard Specifications of Commuting and Suburban Trains, which focuses on the value of basic designs and component sharing.

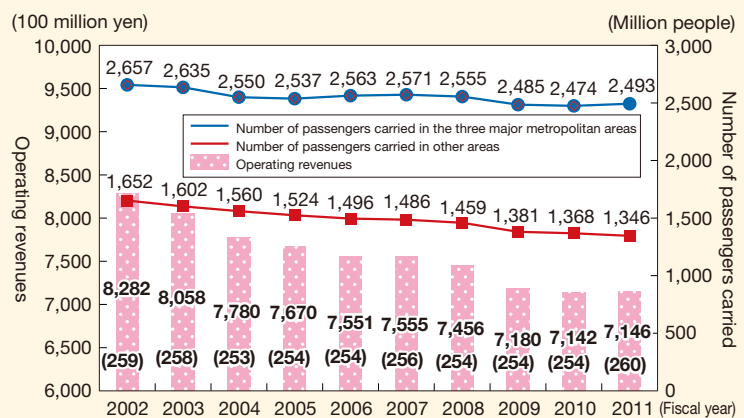
2 Trends in Motor Truck Transportation Business and Measures

(1) Passenger car transportation business

① Motor bus business

Demand for motor bus transportation, which is represented by the number of passengers carried and operating revenues, remained on the decline in pace with changes in the urban structure, such as a hollowing of the central area of a city, and increased ownership of private cars with the progress of motorization. While business activity remains sluggish, the climate surrounding the motor bus business remains extremely harsh.

Graphic II-6-3-1 Changes in the Number of Passengers Carried by Motor Buses and Operating Revenues



(Note) 1 Numeric data presented is based on the data on bus operators maintaining a fleet of 30 or more motor buses. Values in parentheses for a fiscal year indicate the total number of bus operators having a fleet of 30 or more vehicles for that fiscal year.

2 The three major metropolitan areas represent aggregate values from Saitama, Chiba, Tokyo, Kanagawa, Aichi, Mie, Gifu, Osaka, Kyoto and Hyogo.

Source) MLIT

② Chartered bus business

Since deregulations in February 2000, the chartered bus business has sponsored low-cost, diversified bus tours in its effort to deliver better user services, but competition is stiffening with increased in the population of operators in play. Further, as group tours continue to get downsized and travel goods are lower-priced, transportation revenues have been declining. In addition, upsurges in the fuel charges continue to toughen the business climate surrounding the chartered bus business.

③ Taxi business

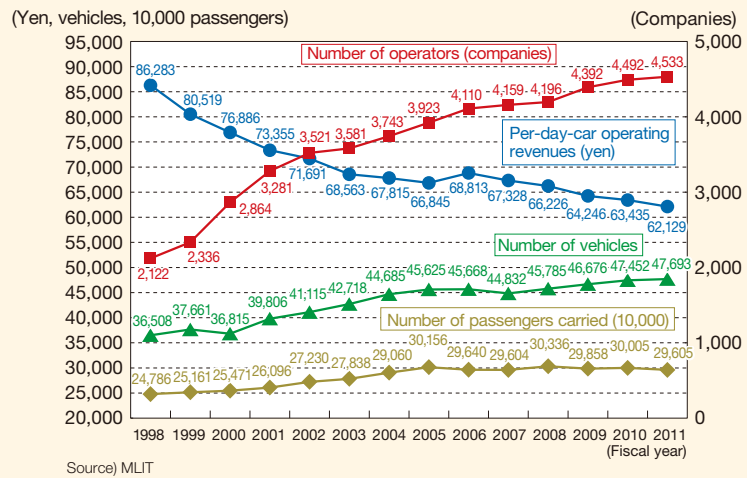
The taxi business is faced with a deteriorating revenue base, worsening driver working conditions and along with other problems in some areas due to increases in the fleet of taxi vehicles while the demand follows a long-term path of reduction, making it difficult for the taxi business to fully demonstrate its utilities of regional public transportation. As a solution to these problems, pursuant of the “Act on Special Measures concerning Regulation and Revitalization of Common Taxi Business in Specified Regions” enacted in 2009, a framework for driving the normalization and reactivation of the taxi business, focusing on voluntary efforts

made by regional stakeholders, has been set up in those areas afflicted with a progressive oversupply of taxi vehicles and other problems (those areas designated by the Ministry of Land, Infrastructure, Transport and Tourism) and has been pursued by the stakeholders.

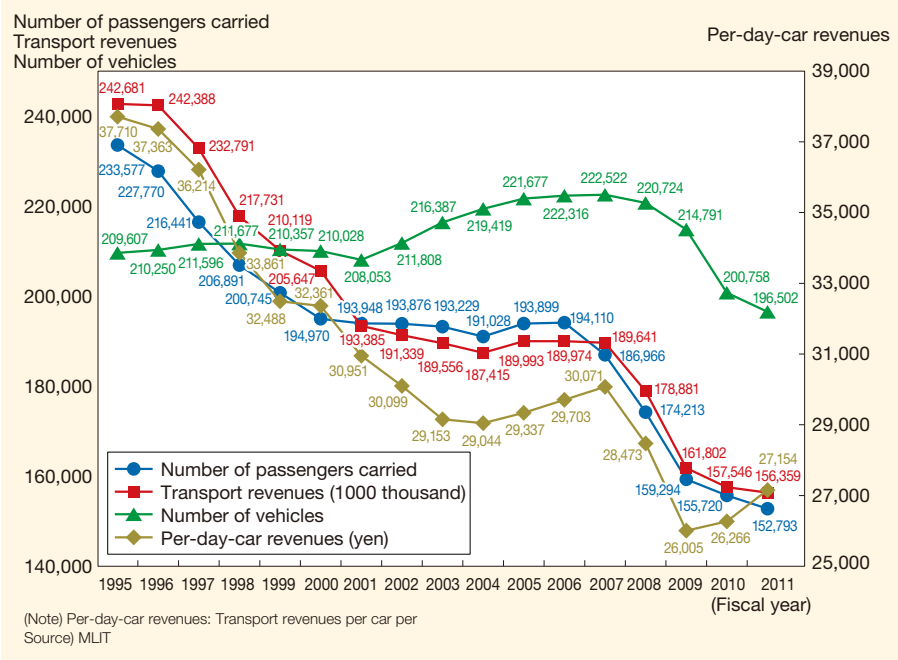
(2) Replacement driver service

The replacement driver service is expected as a workaround means of transport for drinkers. The Ministry of Land, Infrastructure, Transport and Tourism is driving the implementation of measures aimed at normalizing the replacement driver service and add to users convenience and ease of mind. As of the end of December 2012, a total of 8,838 replacement service driver service operators are accredited and in service.

Graphic II-6-3-2 Changes in the Number of Chartered Bus Operators, Number of Passengers Carried, Number of Vehicles and Operating Revenues



Graphic II-6-3-3 Changes in Per Day-Vehicle Reviews of Hires and Taxes



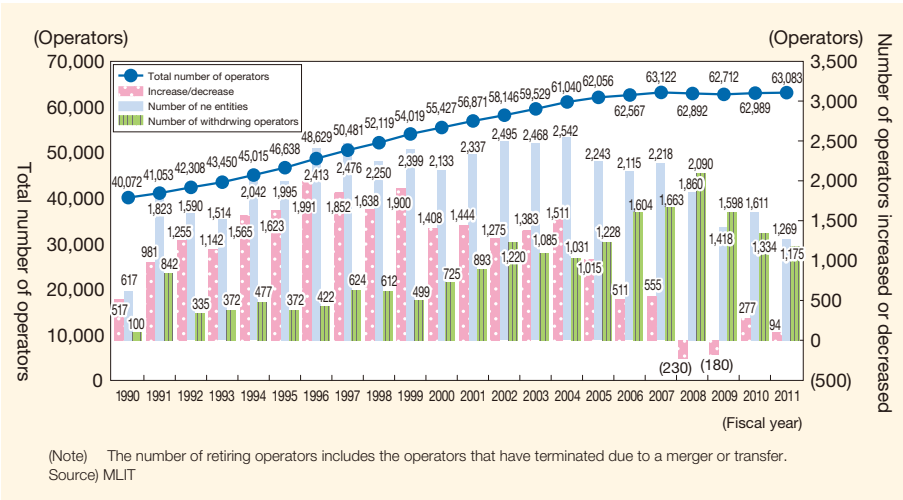
(3) Motor truck freight forwarding business

Although the number of motor truck freight forwarding entities had been on the rise for quite some time, the number of new businesses and those withdrawing have been in contention since 2008 and the number of entities remain at around 63,000.

The management environment surrounding motor truck freight forwarding entities continues to toughen due to the influence from factors such as declining cargo movements amid economic recessions, and light oil prices. Under such circumstances, the support of the diffusion of eco-friendly vehicles has been escalated for this year while pursuing safety in the operators' operations. Debates that had been iterated at a working group of the Study Conference on the Future Vision of the Trucking Industry were compiled into a report released in October.

In response to recommendations by the report, MLIT now works to enhance safety standards for new entities, promote the exchange of contracts in writing with the cargo owners, and implement enhancements to the motor truck freight forwarding normalization projects.

Graphic II-6-3-4 Changes in the Number of Truck Operators



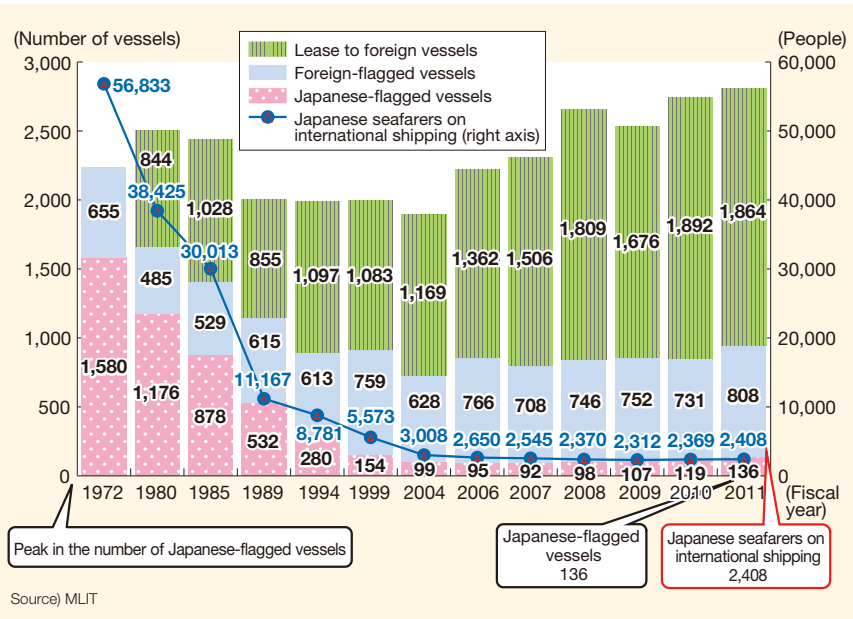
3 Trends in Maritime Industries and Measures

(1) Securing stable maritime transport

① Securing Japanese-flagged vessels and Japanese seafarers

As Japan is a resource-poor nation surrounded by seas on all its sides, international shipping performs an extremely significant role as an industrial infrastructure or lifeline of vital importance to Japanese economy and national life, because it accounts for 99.7% of the export and import of goods. Japan has jurisdiction over and is responsible for protecting Japanese-flagged vessels and Japanese seafarers in support of international shipping. It is necessary to secure the number of Japanese-flagged vessels and Japanese seafarers at certain levels or higher in ordinary times from a viewpoint of economic security assurance, but both Japanese-flagged vessels and Japanese seafarers are on a noticeable decline due to a lack of cost competitiveness.

Graphic II-6-3-5 Number of Japanese seafarers, Japanese merchant fleet



In 2008, a tonnage tax system^{Note} was introduced to increase the number of Japanese-flagged vessels and Japanese seafarers, the core of Japanese merchant fleet, on a planned basis. Ten firms whose Japanese-flagged vessels and Japanese seafarers Securing Plan had been approved by the MLIT in accordance with the Maritime Transport Low have been applied to this tonnage tax and are now working to increase Japanese-flagged vessels and Japanese seafarers on a planned basis. As a result of these efforts, Japanese-flagged vessels and Japanese seafarers have been increased steadily, but since Foreign-flagged vessels have opted to avoid calling at Japanese ports in the wake of the Great East Japan Earthquake and the nuclear power plant accident, the significance of economic security assurance by Japanese merchant fleet has been more pronounced. In the circumstances, the amended Maritime Transport Low came into force in September 2012, establishing a “deemed-Japanese-flagged vessel” system. The deemed-Japanese-flagged vessel means a Foreign-flagged vessel operated by Japanese shipping firm and owned by their overseas subsidiaries which can change its flag to Japan immediately in case of issuing order of navigation in accordance with Maritime Transport Low. Furthermore, the FY2013 Tax System Reform Plan has expanded the target of the tonnage tax system to deemed-Japanese-flagged vessels as applicable vessels, to support the increased Japanese-flagged vessels and promote to secure the deemed-Japanese-flagged vessels to perform a complementary role of Japanese-flagged vessels. Japan will pursue to consolidate stable maritime transport that is functional in times of emergencies, as well as in ordinary times, by way of these and other approaches.

② Acquiring and fostering seafarers

Acquiring and fostering Japanese seafarers, human resources of shipping, is of essential importance to boosting Japan’s economy and maintaining and upgrading national life. Yet, the number of Japanese international ship seafarers has fallen to about 2,400 after peaking at about 57,000. In the meantime, concerns over stable marine transportation loom as coastal ship seafarers continues to get aged at a rapid pace (about 50% of the entire seafarers are 50 years old or more), with the result of a resultant dominant shortage of successors to them.

For this reason, those operators who have their Japanese Ship and Seafarers Acquisition Plans accredited and who pursue to acquire and foster seafarers in accordance with these plans are supported through the tonnage tax system for Japanese international ship seafarers and through the implementation of a planned seafarers employment project for coastal ship seafarers. Specific ongoing efforts intended to acquire and foster good-quality crews include holding efficient and effective sessions of education and training to foster new seafarers ready to work off-hand to fill the needs for international and coastal shipping, expanding the scope of on-board practical training using the vessels owned by shipping service operators (practical training aboard carrier-owned vessels) and seeking varied and excellent human resources from new sources by improving on the qualification systems relating to fisheries high-school graduates, in intensive coordination and partnership with stakeholders connected with the training of seafarers, such as those in the shipping industry and at seafarers education and training institutions, on the basis of a report compiled in March 2012 by the Review Conference on Acquiring and Fostering Seafarers.

In addition to such approaches to crew acquisition and fostering, the Ministry will continue its commitment to supporting the reemployment of retiring seafarers using the retiring seafarers job conversion benefit system, awarding persons of merit instrumental in promoting the Nation of Maritime, expanding the population of prospective seafarers through PR activities, etc. at the Next-Generation Human Resources Development Promotion Conference for maritime industries and promoting the diffusion of the guidelines entitled “On-Board Occupational Safety and Healthy Management System,” which aims to improve the level of occupational safety and health on a phased basis and reduce seafarers disasters continually with ship owners proceeding with continual safety management by voluntarily running a predefined sequence

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Graphic II-6-3-6 Changes in the Number of Japanese Seafarers



Note A tax system that calculates the amount of tax payment on the basis of a predetermined deemed profit according to vessel tonnage, rather than yearly profits. Similar tax systems are already introduced in the world’s major nautical nations.

of risk assessment processes relevant to on-board disasters to augment the vocational charms of being a seafarer.

The I.A.I. Marine Technical Education Agency and the National Institute for Sea Training are the crew training institutions over which the Ministry of Land, Infrastructure, Transport and Tourism hold jurisdiction. The I.A.I. Marine Technical Education Agency not only provides new seafarers' education but also implements reeducation to meet shipping firms' needs or to catch up with technological innovations. The National Institute for Sea Training provides unified on-board practical training on students at the I.A.I. Marine Technical Education Agency and mercantile marine colleges and technical colleges using five training ships. The National Institute for Sea Training has built a small coastal training ship to replace its aged turbine training ship to provide on-board training tailored to the actual needs of coastal ship operation in an effort to develop young seafarers who are capable of service off hand both effectively and efficiently.

(2) Marine transportation industry

① Overseas shipping

The volume of cargo movement in the world for 2011 stood 8,947,000,000 tons (up 4.1% from its year earlier level), with Japan's volume of seaborne trade for the same year at 902,520,000 tons (down 1.4% from its year earlier level).

Emerging nations' economies followed a firm tone of growth in their overseas shipping business for FY2011, but the global economy in general remained on a low-growth orbit in the context of lags in the business pickup of the U.S. economy, protracted European financial and banking issues and a tight monetary policy in China, resulting in a sluggish marine transportation business, a rapidly rising yen, upsurges in the fuel prices and so on to toughen the business climate to a significant degree.

② Coastal passenger shipping industries

The coastal passenger shipping industries has been continuously caught in a tough management climate due to drastic declines in the volume of transportation after protracted economic recessions, trends in expressway tolls and more. The ferry services, which plays an important role as a means of regional transport and as a modal shift receiver, has reduced the number of service and has even pulled out, threatening continued availability of sea routes.

Accordingly, a variety of support measures have been advanced in collaboration with local governments and operators, including making ships more energy-efficient through the introduction of energy-saving equipments, enhancing the charms of voyage by sea, and improving user convenience in cooperation with the tourism industry.

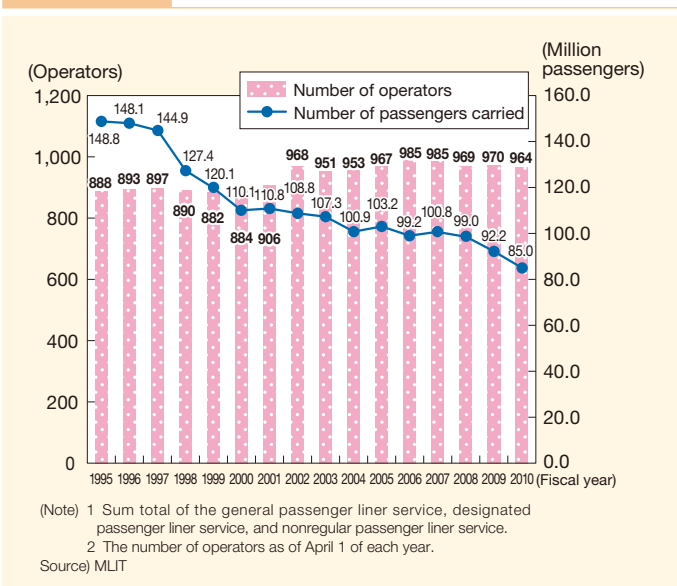
As of April 1, 2010, there were 964 operators, who carried 85,050,000 passengers in FY2010 (down 7.7% from a year earlier).

③ Coastal shipping

Coastal shipping offers both high economic efficiency and an excellent shipping characteristic in terms of environmental preservation. Coastal shipping is a key means of transportation supporting Japan's economic activity and national life, as it accounts for about one third of domestic distribution and about 80% of industrial basic material transport.

Under the influence of accelerating globalization of the world's economy and changes in the domestic industrial structure from a permanently rising yen, the volume of transportation, mainly industrial basic materials, remains stagnant for long, adding to severity of the management environment. As ships continue to get aged rapidly, promotion of substitutional shipbuilding while steadily further improving transport efficiency would be essential in order to keep up with stable transportation while responding precisely to demand changes. To address this task, the Ministry supports with the reductions in the usage fee for substitutional shipbuilding that makes for better environmental performance through joint ownership scheme and promotes the enhancement of competitiveness by making ships more energy-efficient. At the

Graphic II-6-3-7 Changes in the Number of Coastal Passenger Ship Operators and Number of Passengers Carried



same time, the Study Council on Substitutional Shipbuilding Measures for Coastal Shipping compiles guidelines for the measures designed to promote Substitutional shipbuilding for coastal shipping, such as reinforcing competitiveness, expanding into environmentally adaptive industries and responding to an evolving demand structure. In July 2012, approaches to activating coastal shipping through leveraging ship management companies were compiled and published as “Guidelines Relating to Ship Management Activities in Coastal Shipping.” Further, the smooth and steady implementation of Transitional Business for coastal shipping^{Note} is also supported.

④ Port forwarding business

The port forwarding business plays a vital role as a nodal point between marine transportation and land transportation. From viewpoints of streamlining business workflow and offering diverse services, the port forwarding business has been deregulated by converting the entry procedures from a licensing system to an approval system since November 2000 for nine major ports and by converting the rates and charges from an approval system to a prior notification system since May 2006 for other ports. (On April 1, 2012, 39 new licenses were granted, with 229 changes to the scope of work and 1,122 rate and charge notifications having been filed.)

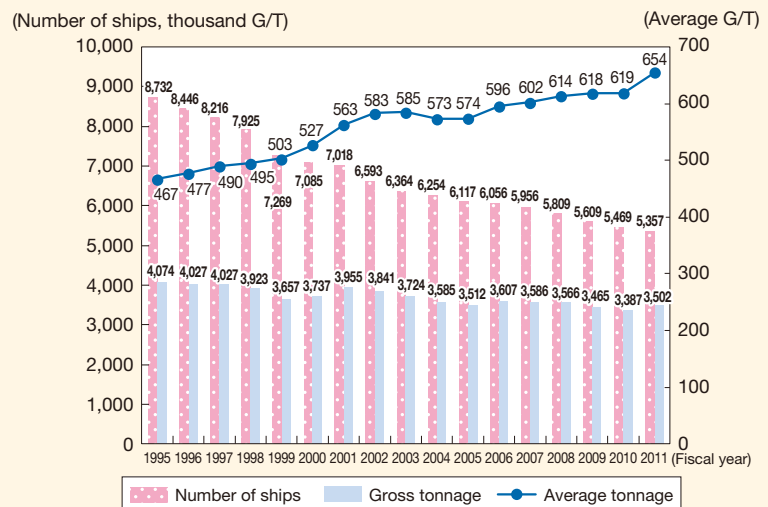
(3) Shipbuilding and ship machinery industries

① Present status of shipbuilding and ship machinery industries

Japan’s shipbuilding and ship machinery industries are extremely important industries that contribute to local economy and employment by providing stable supply of quality vessels tailored to ship owner’s various needs. Japan possesses the marine cluster in which the marine transportation business, shipbuilding business and ship machinery business are closely tied to one another.

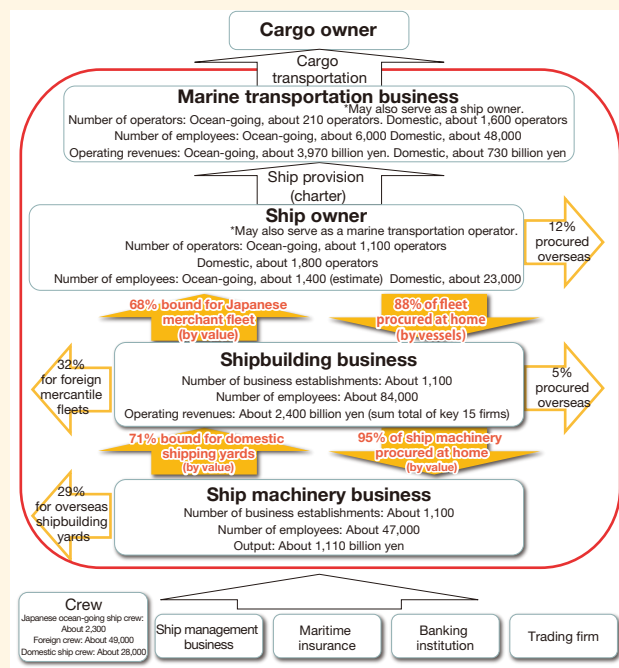
Gaining impetus from the shipbuilding order booms until the summer of 2008 backed mainly by increase in the volume of marine transportation following a buoyant global market, China and Korea stepped up their shipbuilding capacities rapidly, pushing the world’s amount of new shipbuilding for 2012 to 95,270,000 gross tons (against 17,430,000 gross tons for Japan, accounting for 18% of the global market). Since the slowdown in the world economy

Graphic II-6-3-8 Changes in the Number of Coastal Ships



Source) MLIT (as of the end of fiscal year)

Graphic II-6-3-9 Japan’s Marine Cluster

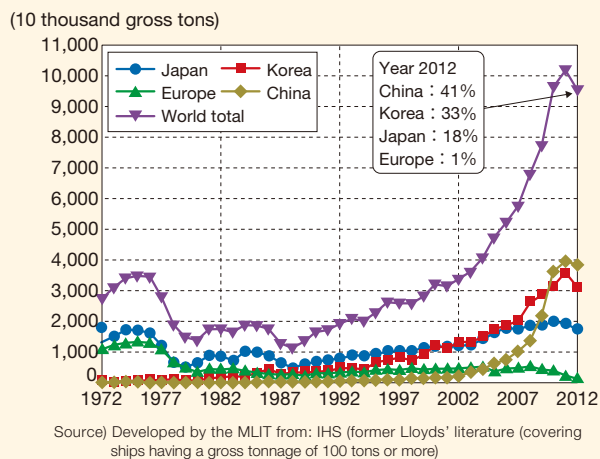


Source) MLIT

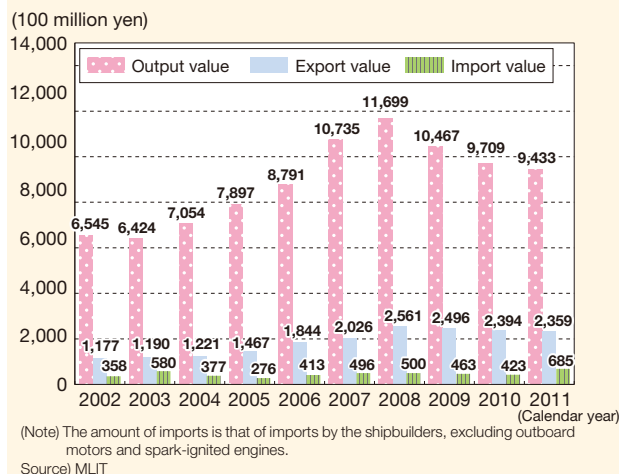
Note A system of offering a certain amount of grant to those who have dismantled or removed their ships, with the shipbuilders directed to pay a fee in return after having resolved the system that scrap-and-build-base arrangement of holding capacity of shipping.

in the autumn of 2008, however, the volume of new shipbuilding orders has dropped sharply and become more uncertain than ever in context of the financial unrest in Europe. As a rising yen has lasted long, Japan's shipbuilding and ship machinery businesses are faced with an increasingly difficult business climate.

Graphic II-6-3-10 Changes in the Volume of Newly Built Ships in the World



Graphic II-6-3-11 Japan's Marine Industrial Product Output and Export/Import Results



The production of ship machinery products (except for outboard motors) for 2011 was valued at 943.3 billion yen (down about 2.8% from the previous year), with an export amount of 235.9 billion yen (down about 1.4% from the previous year). The climate surrounding the ship machinery business is predicted to become harsher than ever, with sharp decline in the orders for new shipbuilding, intensifying global competition and increasingly aging workforce.

② Efforts aimed at reinforcing international competitiveness of shipbuilding and ship machinery industries

To reinforce the international competitiveness of Japan's shipbuilding and ship machinery industries and allow Japan to stand as a first-class shipbuilding nation, implementation of the policy package focusing on the reinforcement of Japan's order-taking capacities and expansion into new markets and new segments of the shipbuilding and ship machinery fields, need to be propelled.

To help build up order-taking capacities, the Ministry proceeded with preparation of domestic legislations related to a CO₂ emissions control scheme that had been introduced to the international shipping by Japan's initiative and also extended its support to shipbuilders and marine transporters on development of innovative energy-saving technologies that dramatically improve fuel efficiency of ships. A project to create an environment for facilitating early commercialization and popularization of the environmentally-sound natural gas-fueled ships has also been launched since FY2012. The Ministry continues committing to realize a desirable framework of international collaboration under cooperation between the private and public sectors and promoting research and development and diffusion of, innovative energy-saving technologies for ships including natural gas-fueled ships.

The Ministry drives effort for expanding into new markets and new businesses, namely, the promising fields of marine resources development and renewable marine energy sources. More specifically, it supports private sector's involvement into marine resources development projects in which Japan has technical strength, and also the development of technologies related to marine resources development to acquire those technologies that enable Japan to carry out development in its own EEZ and thus create marine markets. In April 2012, the Ministry just formulated technical standards on floating wind turbine power plants and seeks to reinforce Japan's international competitiveness by take initiatives in making international standardization.

The Ministry has also dedicated to combat fake ship machinery products and worked to consolidate engineering capabilities of smaller shipbuilders through promotion of Super Eco-Ships (SES^{Note}) by Japan Railway Construction, Transport and Technology Agency (JRTT), commercialization support of evolving technologies and so on.

Note Next-generation coastal ships that use an electrical propulsion system for excellent environmental and economic performances achieving less CO₂ and NO_x emissions and higher fuel efficiency.

4 Trends in Air Transportation Business and Measures

The number of domestic air travelers in FY2011 in Japan slipped for the fifth consecutive year to reach 79,050,000 (about 3.8% down from the previous fiscal year) mainly under the influence of global economic recessions and the Great East Japan Earthquake, and the number of international air travelers also registered a fourth consecutive yearly decline with 12,590,000 (about 8.1% down from the previous fiscal year), suggesting a harsh business climate surrounding Japan's air transportation business.

Japan Airlines was relisted on the Tokyo Stock Exchange on September 19, 2012 to wrap around the support of Enterprise Turnaround Initiative Corporation of Japan following completion of the corporate reorganization proceedings on March 28, 2011 as a result of its withdrawal from non-profit-making routes as provided in the rehabilitation plan, its steady pace of corporate downsizing and more. The FY2011 settlement report released on May 14, 2012 registered a record-high operating profit of 204.9 billion yen.

From now on, the Ministry will call upon Japan Airlines to report on its status of corporate rehabilitation periodically or from time to time during the JAL Group Mid-Term Management Plan period (FY2012 to FY2016) to confirm that corporate rehabilitation has been carried out properly and positively and that the airlines' competitive environment has not been unfairly impeded by public aids and will also supervise its status of corporate rehabilitation and provide supervision and advice as appropriate.

Peach Aviation came into service on March 1, 2012 at Kansai International Airport as a base airport, followed by Jetstar Japan Co., Ltd. coming into service on July 3 of the same year and AirAsia Japan Co., Ltd. on August 10, each at Narita International Airport as a base airport. All these airlines are expected to create new demand by driving an LCC project featuring a low airfare tariff derived from low-cost air operations.

5 Trends and measures in consigned freight forwarding business

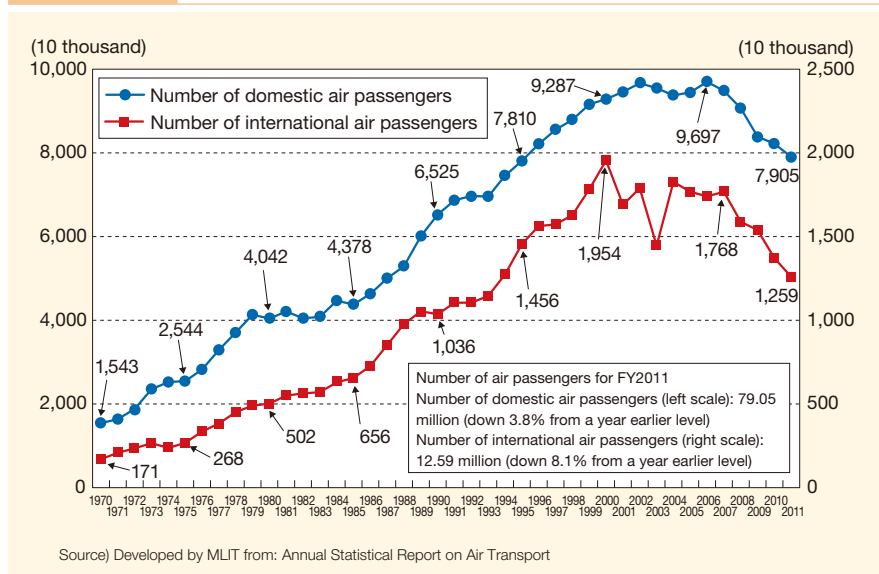
The consigned freight forwarding business^{Note} is combined with multiple means of transport to provide services specific to varied user needs. Recent years have witnessed growing entry into the aircraft- and ship-based segments of international shipment to reflect the cargo owners' needs for globalization.

Further, as internal trade takes on an increasingly important tone, global shipment gets more streamlined than before, urging safety assurance during transportation. The Ministry of Land, Infrastructure, Transport and Tourism works to ensure the availability of safe and secure logistics services, as by conducting audits, etc. to consolidate thorough operator code compliance.

6 Trends in the Warehousing Business and Measures

Commercial warehouses play a vital role as nodes of physical distribution. After the requirements for entry into the

Graphic II-6-3-12 Changes in the Number of Air Passengers (Japanese Airliners)



Note A business that leverages the means of transportation (motor trucks, railways, aircraft, ships) held by actual forwarders (those that conduct forwarding by themselves) to convey cargoes to realize a fully integrated flow of mixed door-to-door transportation, from cargo collection to delivery.

warehousing business were eased to a registration system, the number of newcomers has steadily increased, with the number of warehouse operators reaching 5,902 as of the end of FY2011 (up 847 over the end of FY2001).

In recent years, the construction of large, intelligent physical distribution facilities by foreign or domestic real estate entities or funds has been activated, giving birth to warehouse operators who rent such facilities to develop their businesses.

To fulfill sophisticated and diversified needs for physical distribution, warehouse operators tend to combine other multiple physical distribution businesses, such as a consigned freight forwarding business.

7 Trends in the Truck Terminal Business and Measures

The truck terminal business plays a significant role in streamlining the flow of transport, mitigating congestion and so on as a nodal point of trucking between a trunk line and a terminal. In recent years, the construction of facilities that provide the functionality of a distribution center (sorting, processing for distribution and so on), as well as loading and unloading, is in progress to meet the sophisticated and diversified needs for physical distribution.

8 Trends in the Real Estate business and Measures

(1) Conditions surrounding the real estate business

The real estate business is one of the key industries that command 2.6% of the total sales of all industries and 10.8% of the total number of corporations (FY2011).

The number of housing starts, on the decline since the Lehman Shocks, bottomed out in August 2009 and took a turn towards gradual pickup, with a temporary slippage under the influence of the Great East Japan Earthquake, following a firm undertone of recovery since, with last-minute demand sparked by Housing Eco-Points nearing the time limit for housing starts at the end of July 2011.

In the existing housing distribution market, the number of successful deals followed a firm undertone, reaching 136,000 for FY2011 (up 4.4% from its year earlier level) according to Real Estate Information Network Systems for IP Services (REINS).^{Note}

Since December 2011, a voluntary system of rental housing management entity registration that places a certain set of rules on the fulfillment of rental housing management services has been put into effect since December 2011 to foster and develop a good-quality rental housing business. As of the end of March 2012, 1,579 rental housing management entities were registered.

(2) Precise application of the Building Lots and Buildings Transaction Business Act

The Ministry endeavors to ensure precise administration of the Building Lots and Buildings Transaction Business Act to protect consumer interest involved in housing land and building deals and to expedite distribution. There were 123,922 building lots and buildings traders (as of the end of 2012).

This number is on a slight decline in recent years. The Ministry of Land, Infrastructure, Transport and Tourism, along with prefectural and municipal governments, endeavor to prevent complaints and disputes by working in conjunction with the bodies concerned while imposing severe supervisory dispositions on those entities that have breached the law. In FY2011, 358 supervisory dispositions were imposed (including 216 revocations of licenses, 54 suspensions of business and 88 order).

To combat the problems of malicious soliciting at the time of condominium sale, the Act was amended in August 2011 to define the acts that are prohibited in soliciting in connection with building lots and buildings transactions. The Ministry will continue to alert consumers through its Website or other means and work together with the agencies concerned to provide relevant supervision and guidance.

Note A scheme under which housing land trading entities register property information with a specified distribution system for sharing with other entities. Information on the trade prices of real properties in successful deals is stored on the specified distribution system.

(3) Securing proper management by condominium management service firms

To ensure proper management of growing stocks of condominium, a system of registration for condominium management services entities and service regulations have been put into effect to ensure their proper management in accordance with the Act on Advancement of Proper Condominium Management. As of the end of 2011, 2,319 condominium management services entities were registered, with no significant changes in their number of the last couple of years.

From a viewpoint of promoting the code compliance of condominium management services entities, on-the-spot inspections have been conducted on condominium management services entities.

(4) Revitalizing the real estate market

① Present status of the real estate market

Japan's real estate had a total asset value of about 2,500 trillion yen as of the end of FY2011.^{Note 1}

The asset amount of the real estate or the beneficial interest in trust on the real estate that were acquired by J-REIT (real estate investment entity), real estate specified joint enterprises, special-purpose companies and so on as objects of securitization during FY2012 stood at about 3.3 trillion yen.

The dominant player in the real estate investment market, J-REIT resumed new listing in FY2012 for the first in four years since FY2009, listing six new stocks for a single year in FY2012. As of the end of March 2013, 39 stocks were listed on the Tokyo Stock Exchange, with the target real estate having a total of about 10 trillion yen and the real estate investment securities having a quote value of about seven trillion yen.

Right after the Great East Japan Earthquake that took place on March 11, 2011, the Tokyo Stock Exchange REIT Index, an indication of the movement of prices in the listed J-REIT market as a whole, slipped from the closing price of 1092.29 on the day previous to the quake down to 926.83 on March 15, 2011, but it but picked up to 1055.18 by the end of March 2011, since the impact of the quake upon the real estate owned by J-REIT was limited, relevant information was made available promptly and funds, including a Bank of Japan fund for purchasing assets, purchased J-REIT investment lots.

Subsequently, worsening European sovereign debt crises had a dampening effect on the investors' mind to invest in risky assets, with the Tokyo Stock Exchange REIT Index sagging to 805.64 points (on November 28, 2011) temporarily. But a decision to consolidate monetary relaxations made at the Bank of Japan Monetary Policy Meeting (February 14, 2012) triggered a comeback in the stock market, with the Tokyo Stock Exchange REIT Index picking up. As of the end of March 2013, the Index restored its January 2008 level of 1642.79 points.

② Conditioning the real estate market

The Ministry of Land, Infrastructure, Transport and Tourism surveys real estate trade prices, etc. nationwide in a bid to make the real estate market more transparent and streamline and reactivate deals. Information thus collected from such surveys, including locations, areas and prices of real properties traded, is uploaded at a Website on the Internet (Land General Information System^{Note 2}) with due care taken to prevent identification of the individual properties (as of March 2012, information on 1,614,213 properties was posted, attracting a total of about 340,000,000 accesses).

Further, information that is created by processing trade price information held on Real Estate Information Network Systems for IP Services (REINS) is made available through a real estate trade information Web site.^{Note 3} The Tokyo Stock Exchange has developed housing price indices based on information about successful real state deals in cooperation with bodies concerned, such as REINS and has released them on a trial basis since April 2011. Furthermore, the real estate industry has opened up a general real estate Web site (Real Estate Japan),^{Note 4} an integrated source of information on the properties handled by real estate dealers accessible to consumers, in its concerted effort. The Ministry of Land, Infrastructure, Transport and Tourism has consistently supported these industry efforts.

Note 1 A sum total of the amounts of building, structure and land assets based on national economic accounting.

Note 2 <http://www.land.mlit.go.jp/webland/>

Note 3 <http://www.contract.reins.or.jp/>

Note 4 <http://www.fudousan.or.jp/>

Moreover, international agencies worked together to draft Handbook on Residential Property Price Indices (RPPI Handbook) to build an Early Warning Signal System by taking lessons from the subprime and other crises and came up with a final version of RPPI Handbook in May 2011. The Ministry of Land, Infrastructure, Transport and Tourism responded to RPPI Handbook to prepare Japan Residential Property Price indices and put into trial service in August 2012. It now debates their full-scale implementation.

Graphic II-6-3-13 Land General Information System

- Since April 2006, trade price information collected from questionnaire surveys conducted among the parties to real estate deals has been released at the Ministry of Land, Infrastructure, Transport and Tourism Web site every quarter, with due care taken to avoid easy identification of individual properties.
- The Website offers a collection of 1,614,213 records of information, attracting about 340,000,000 accesses (about 7.2 million access per month) [FY2012 results].

土地総合情報システム Land General Information System

不動産取引価格情報検索

2 不動産取引価格情報を表示する地域をクリックしてください。
 ① 地図の場所【東京都千代田区千代田 付近】

東京都千代田区千代田 付近

平均値 中央値 第3四分位数 第1四分位数

平成23年第4四半期～平成24年第3四半期の東京都千代田区岩本町の土地取引件数 33 件

検索条件: [種類]土地 [地域]東京都 千代田区 岩本町 [取引時期]平成23年第4四半期～平成24年第3四半期
 検索結果: 5件中 1件目～ 5件目を表示中(1/1ページ目)

詳細表示	所在地	地域	最寄駅	名称	距離	取引総額	坪単価	面積	m ² 単価	形状	幅員	種類	方位	都市計画	建ぺい率	容積率	取引時期
1	千代田区 岩本町	商業地	岩本町		7分	3,800万円	230万円	55m ²	71万円	ほぼ長方形	8.0m	区道	南西	商業	80%	600%	H23/10-12月
2	千代田区 岩本町	商業地	小伝馬町		2分	44,000万円	740万円	195m ²	220万円	ほぼ長方形	22.0m	区道	北東	商業	80%	700%	H24/07-09月
3	千代田区 岩本町	商業地	小伝馬町		4分	61,000万円	560万円	360m ²	170万円	不整形	22.0m	区道	北西	商業	80%	600%	H24/04-06月
4	千代田区 岩本町	商業地	馬喰町		3分	3,500万円	260万円	45m ²	79万円	ほぼ長方形	8.0m	市道	南東	商業	80%	600%	H24/04-06月
5	千代田区 岩本町	商業地	馬喰町		4分	4,600万円	280万円	55m ²	85万円	ほぼ長方形	8.0m	区道	南西	商業	80%	600%	H24/01-03月

Source) MLIT

③ Tax system utilization

The FY2013 tax reform has stretched the expiry dates for the preferential measure (registration and license tax) for the registration of transfer, etc. of the ownership of land upon its trading and also the preferential measure for the real estate circulation taxes (registration and license tax and real estate acquisition tax) that are imposed on the acquisition of real estate by J-REIT and special-purpose companies.

④ Pursuing the emergence of a new real property market tailored to the needs of a new era

The Scope of Work Standard has been formulated that implement the concept of “Scope of Work” in the procedural flow of appraisal to address diversified needs for real property appraisal and reflect the progress of the practice of real property market value evaluation in corporate accounting. Efforts are in progress to broaden public recognition of the Standard. At the same time, On-Site Inspections were made of real property appraisal firms to ensure the legitimacy of their work of re-appraising securitized real property and also at their appraisal for financial reporting. In addition, the Real Property Appraisal Subcommittee of the Lands Policy Committee, The National Land Development Council has set into a debate into motion to review The Real Property Appraisal Standard, etc. to catch up with the pace of globalization of the real property market and diversified needs for appraisal.

The presence of many seismically inadequate buildings and concerns over tight power supplies, such as those triggered

by the Great East Japan Earthquake, dictate the formation of good-quality aseismic and eco-friendly real estate. To accelerate the introduction of private funds to finance the quake-proofing of buildings and the renewal of urban facilities, a Bill on Partial Amendments to the Real Estate Specified Joint Enterprise Act was just submitted to the 183rd session of the Diet, which authorizes special-purpose companies (SPC) fulfilling a certain set of requirements to conduct real estate specified joint enterprises.

Further, an aseismic and eco-friendly real estate formation and promotion project has been inaugurated to encourage the formation of good-quality real estate that possesses aseismic and environmental performance by leveraging private funds and know-how, with the government furnishing risk money to prime private investment in aged or untapped real estate, and to drive the implementation of community planning to make for regional rejuvenation and reactivation, including the renewal of station fronts to serve as regional cores, as well as for low-carbonization of existing stocks, such as office buildings.

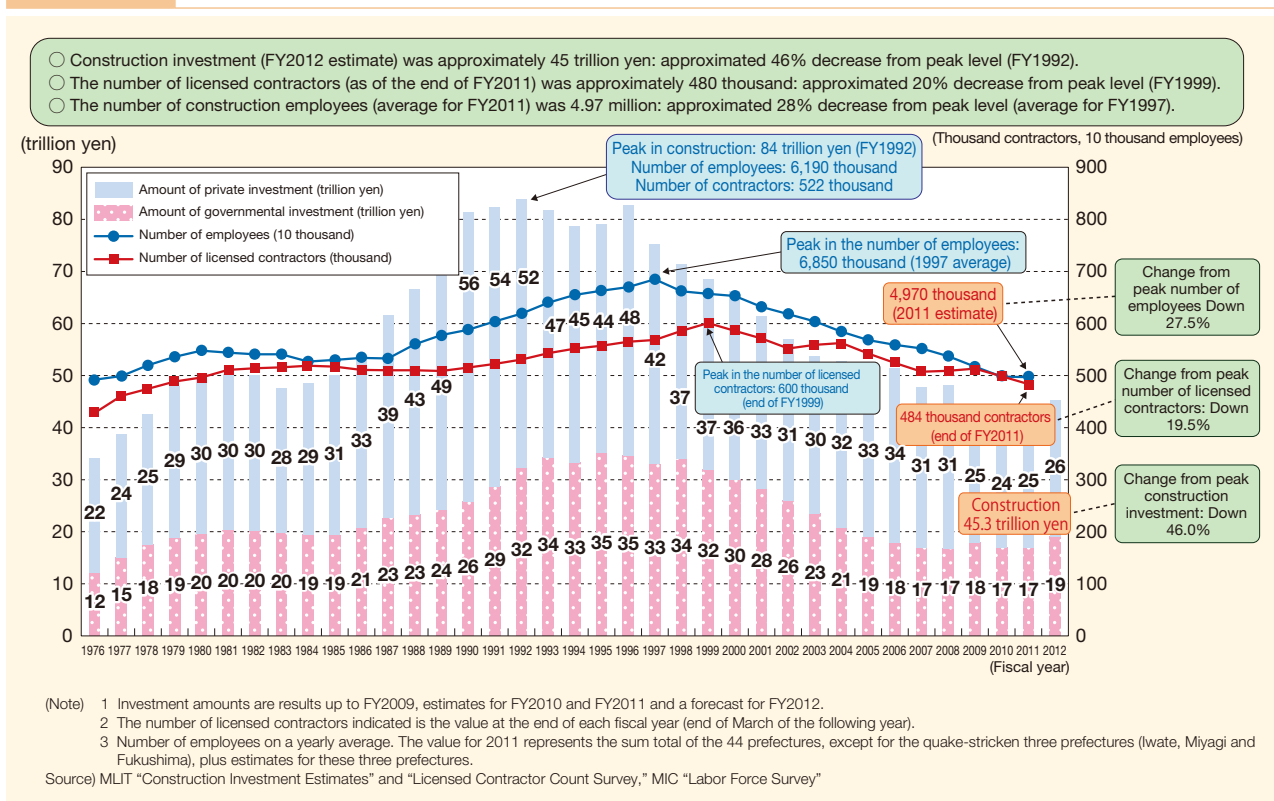
Furthermore, the Environmental Real Estate Conference has been held as a forum of information exchange among market participants and brew common understandings to help form sustainable real estate stocks. Information has also been released through an environmental real estate portal site.^{Note}

9 Reviving vitality of construction industry

(1) The present situation of construction industry

Changes in construction investment, licensed contractors and number of employees are listed below (Graphic. II-6-3-14).

Graphic II-6-3-14 Changes in Construction Investment (Nominal), Licensed Contractors and Number of Employees



Note <http://tochi.mlit.go.jp/kankyo/index.html>

(2) Debates on the materialization of policies designed to aid in rejuvenation and growth of the construction industry

The Conference on Construction Industry Strategy compiled “Policy 2011 for the Rejuvenation and Growth of the Construction Industry” in June 2011 and “Policy 2012 for Rejuvenation and Growth of the Construction Industry” in July 2012.

In a bid to build a robust construction industry capable of supporting regional futures and to assure the lasting quality of construction works, the Ministry of Land, Infrastructure, Transport and Tourism held Review Conference on the Acquisition and Development of Supporting Human Resources in September 2012 to debate policies relating to the acquisition and development of human resources, such as:

- ① Specialized contractor appraisal;
- ② Visualization of skilled construction workers;
- ③ Wider-spread acceptance of registered key technicians;
- ④ Education and training for skilled workers; and
- ⑤ Strategic publicity

and suggested a major course of action in March 2013. Further, the Council on the Utilization of Various Contract Methods was inaugurated in October 2012 to review, disseminate and publicize diverse contract methods so that the parties to a contract can smoothly choose the right contract method relevant to a new business need or to a specific project.

(3) Establishing a framework of fair competition

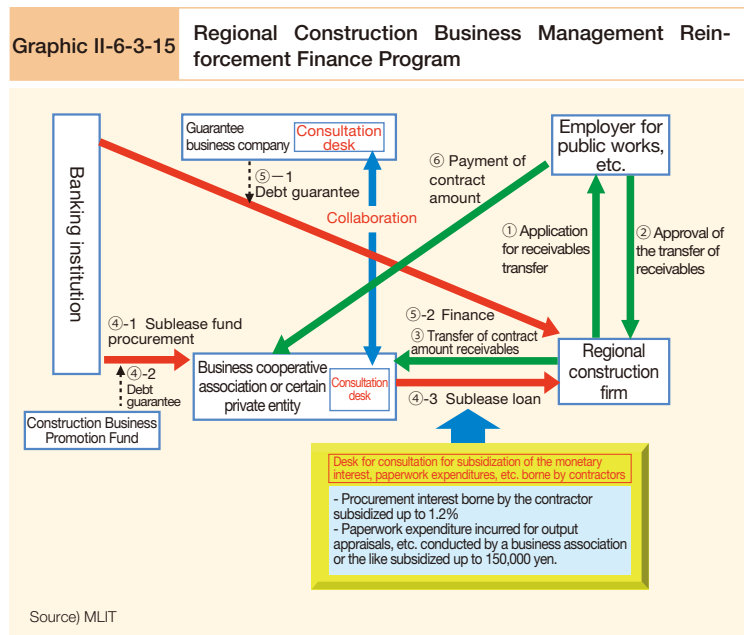
To realize a state of competition that allows enterprises furnished with excellent engineering, construction and management capabilities to survive rapidly diminishing construction investment and even grow higher, establishing a framework of fair competition, including thorough compliance with governing laws and regulations by contractors, is important. To this end, the Ministry has been working to normalize the deals between prime contractors and subcontractors in the construction business by conducting subcontracting transaction status surveys, on-the-spot surveys, etc., opening a desk for consultation services on troubles, complaints and other problems encountered in concluding construction work contracts as “Construction Business Transaction Normalization Center” and collaborating with prefectural and municipal governments during the Construction Business Normalization Promotion Month (November).

(4) Financial measures directed at the construction business

① Regional construction business management-incentive finance program

The regional construction business management-incentive finance program allows prime contractors to acquire loans from a cooperative association or a certain private entity on security of the public works contract price credit obligations, according to the completed amount of the works. Its purpose is to smooth their cash flow and ease their burden of interest payment.

This program is effective since November 2008 and its business period was stretched in February 2013 to the end of FY2013.



② Subcontracting receivables preservation aid project

The subcontracting receivables preservation project proactively promotes the guaranteed payment of the account-receivables for contract prices subcontractors, etc. have for their primary contractors when the payment of such receivables is guaranteed by a factoring company^{Note} by easing the guarantee charge burden of the subcontractors, etc. and indemnifying the factoring company for the loss it may suffer upon fulfillment of the guaranteed obligations.

Inaugurated in March 20, this project was extended in February 1013 to expire at the end of FY2013.

③ Disaster-stricken construction business handling financial aid project

The FY2012 supplementary budget has created a disaster-stricken construction business handling financial aid project to finance the purchasing of typical construction machinery used by smaller and middle-ranking contractors to handle the aftermaths of natural disasters and to ease their monetary interest burden on their borrowings relating to the purchase of the construction machinery.

(5) Promoting the development of human resources to support manufacturing

The construction industry is supported by human resources, because it depends on the competency of experts or technicians for successful production. The industry is now faced with the problems of an aging workforce and a declining number of young workers entering into the industry amid drastic cuts in construction investment and reductions in the number of employees at work.

Further, many enterprises fail to pay their due shares of the legal welfare expenses, such as obligatory social insurance premiums. The diminishing number of young workers entering into the industry is attributable in one way to a lack of a minimum package of welfare services for skilled workers. In addition, the more seriously an enterprise subscribes to insurances, the less competitive position it is put to.

For this reason, the administrative, primary contractors and subcontractors will work in accord to promote subscription to social insurances and explore ways to “visualize” the proficiencies of skilled workers and encourage the entry of young workers, develop and evaluate human resources and so on. In addition, the acquisition, development and utilization of registered technicians who are furnished with work management, modulatory and other relevant capacities to qualify themselves to work in key operations have been promoted.

As of April 1, 2013, 39,043 technicians (in 30 different kinds of jobs) were registered. The availability of registered key technicians is taken into account at point addition scoring during the Ministry’s management reviews or contractor bidding assessment for public works projects (trial works).

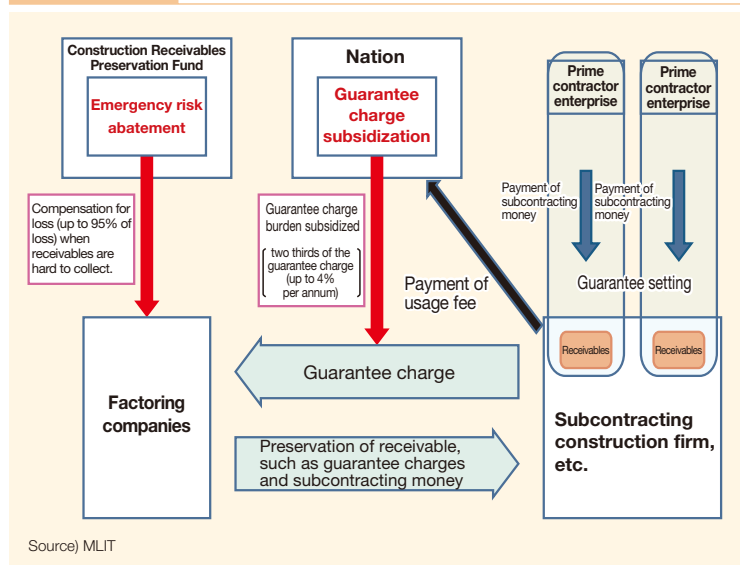
(6) Promoting the construction industry

① Management support to regional construction businesses

The development of new projects by 91 coalitions has been subsidized on the basis of the Construction Firm Coalition-based Frontier Project. At the same time, project result report meetings were held at 11 locations nationwide and in Tokyo.

In addition, advisors on construction business management strategy provided advised smaller and middle-ranking

Graphic II-6-3-16 Subcontracting Receivables Preservation Support Project



Note A banking business company that purchases receivables or credit obligations owned by others and collects the credit. A total of 10 factoring companies, including banks’ subsidiaries, prepayment guarantee companies and leasing companies, run this business at present.

contractors by telephone or on a visit to support them in their efforts to implement their management strategies, such as deploying new projects, restructuring their management systems and closing businesses, in response to their requests submitted through the management strategy consultation desk. Support teams composed of such advisors and other personnel extended planning and other kinds of support to 46 of the all contractors seeking consultation. Partnership deals had been concluded with 33 prefectures and 330 banking institutions to build up the system of consultation support further.

② Promotion of construction-related businesses

Provisions for the exclusion of anti-social forces and toughened supervision and guidance in construction-related businesses (surveying, construction consulting and geological research) have been added in the construction consultant registration regulations and publicized on the Internet to ensure proper administration of the registration system and development and sound growth of good-quality construction-related businesses.

(7) Present status of construction machinery and growth of construction production technologies

In FY2009, about 850,000 units of construction machinery^{Note} were owned in Japan. By industry, about 44% of the construction machinery was purchased by the leasing and rental business and about 22% by the construction business.

About 15% of the industrial accidents involving deaths in the construction business were associated with construction machinery, etc. In recent years, the practice of safety management tends get increasingly more laborious than before to integrate as the implementation of a multilayered work execution system progresses. To catch up with this trend, construction machinery work safety technology guidelines were updated and construction machinery work execution safety manuals formulated to pursue greater safety in the execution of works using construction machinery.

In addition, the Ministry, keen to resolve the various problems facing the construction business (such as low productivity, shortages of skilled labor and assurance of construction quality) and to promote the diffusion of the innovative ICT-based innovative technologies of construction), works to develop an environment between employers and contractors, by maintaining construction management standards and standardizing design data to clear up the problems that impede the widespread acceptance of these innovative technologies.

(8) Settling disputes arising from the execution of construction works

To promptly resolve disputes arising from the execution of construction work contracts, the Construction Works Dispute Review Panel implements dispute settlement procedures. In FY2011, the Panel received 41 applications (five of arbitration, 30 for conciliation and six for mediation) at the central level and 123 applications (18 for arbitration, 86 for conciliation and 19 for mediation) at the prefectural level.

Note Major machine types: About 593 thousand hydraulic shovels, about 157,000 wheel-type tractor shovels and about 39 thousand bulldozers.

Column

The effort of a smaller contractor to pursue rejuvenation by accommodating regional needs – Construction services business –

A smaller contractors founded in 1955 based in the intermediate and mountainous town of former Takebe (now consolidated into Okayama City), Osakada Corp. has acted mainly in the field of public works project implementation.

In the red for the ninth consecutive term since 2001 under the influenced of recent cuts in the public works projects budget, the company was on the brink of bankruptcy. In its desperate quest of survival, the company came up with a strategic solution of filling local needs by dismantling the generally accepted notion of a construction business that it won't accept small, odd jobs. In the spring of 2009, the company embarked on a construction services business that offers one-stop service solutions to whatever is annoying in the daily lives of the local residents, including sewage clogging, rain gutter cleanup, garden weeding and other odd jobs around housing, grave cleaning, facilitating water inflow into paddy fields and honeycomb removal. At the same time, a cost management software package was introduced to gain a field-specific insight to the status of day-to-day accounting to avert losses even from the execution of low-valued works.

The name of the company had been obscure to most of the approximately 6,000 residents of Takebe Town, except for those in some areas. The knowledge of the services gradually permeated the residents as a result of it strenuous marketing efforts to make it known, such as holding events to introduce jobs available from the company periodically to serve as a forum of resident exchange and circulating newspaper inserts monthly. Gaining strength from its ties of mutual trust with the local residents formed by resolving their annoyances, the company began to take orders for relatively larger construction works, such as rebuilding graves and remodeling houses. Performance began to pick up slowly, to reinstate the company in the black for the third consecutive term in FY2012.

The company now pursues a scheme of readiness to fully address diversified, multiphased customer needs in the underseved fields of building remodeling and agriculture, among the construction services businesses, by taking advantage of expert dispatch services available from the Management Strategy Advisory Project for Construction Firms administered by the Ministry of Land, Infrastructure, Transport and Tourism.

Amid tight public works project budget appropriations, the company's transition to seek its new sphere of activity in the field of private construction works, after its career out as a provider of solutions to the problems cherished by local residents, might be suggestive to smaller local contractors.



Source) Osakada Corp.

Repertoire of construction services handled



Source) Osakada Corp.

Chapter 7

Building a Safe and Comfortable Society

Section 1 Realizing a Universal Society

1 Realizing Accessibility through a Universal Design Concept

The “Act on Promotion of Smooth Transportation, etc. of Elderly Persons, Disabled Persons, etc.” embodies the universal design concept of “freedom and convenience for anywhere and anyone,” making it mandatory to comply with “Accessibility Standards” when newly establishing various facilities (passenger facilities, various vehicles, roads, off-street parking facilities, city parks, buildings, etc.), mandatory best effort for existing facilities as well as defining a development target for the end of FY 2020 under the “Basic Policy on Accessibility” to promote accessibility.

Also, in accordance with the local accessibility plan created by municipalities, focused and integrated promotion of accessibility is carried out in priority development district; to increase “caring for accessibility,” by deepening the national public’s understanding and seek cooperation for the promotion of accessibility, “accessibility workshops” are hosted where you learn to assist as well as virtually experience being elderly, disabled, etc.; these efforts serve to accelerate accessibility measures (sustained development in stages).

(1) Accessibility of Public Transportation

In accordance with the “Act on Promotion of Smooth Transportation, etc. of Elderly Persons, Disabled Persons, etc.,” public transportation administrators are required to comply with “Accessibility Standards for Public Transportation” when carrying out new development of passenger facilities or large-scale improvements as well as introducing new vehicles and for existing facilities. Efforts must be made to comply with these standards and staff must be educated and trained as needed to strive for accessibility as part of the stipulated requirements for mandatory efforts. In addition, assistance measures are available to support the accessibility of passenger ships as well as train stations and other passenger terminals along with the implementation of non-step (low-floor) busses, lift-equipped busses, welfare taxis, and other initiatives.

Graphic II-7-1-1 Current Accessibility of Public Transportation

As of 3/31/2012

○ Passenger Facilities (over 3,000 persons/day using on average)

	Total Facilities	Passenger Facilities Compliant with Accessibility Standards for Public Transportation (No Grade Barriers) ^{(Note) 1}	Share of Total
Railway stations	3,442	2,788	81.0%
Bus terminals	51	41	80.4%
Passenger ship terminals	15	13	86.7%
Airport passenger terminals	28	25	89.3% (100%) ^{(Note) 2}

(Note) 1 Regarding “no grade barriers”, grading is calculated based on compliance with Article 4 (covering the width of travel paths, graded paths, elevators, escalators, etc.) of the ministerial ordinance (Accessibility Standards for Public Transportation) that defines the standards applicable to structures and facilities such as passenger facilities and vehicles necessary for smoothness of transport.

2 For “practical relief of grade barriers” (installation of elevators, escalators, and slopes that the disabled and others can use), this was achieved 100% by the end of March 2001.

○ Vehicles

	Total Vehicles	Vehicles Compliant with Accessibility Standards for Public Transportation ^(Note)	Share of Total
Railway carriages	52,715	27,854	52.8%
Low-floor busses	46,025	17,661	38.4%
Lift-equipped busses	13,075	438	3.3%
Welfare taxis	—	13,099	—
Passenger ships	727	150	20.6%
Airplanes	509	438	86.1%

(Note) “Compliance with Accessibility of transport vehicles” is calculated based on each vehicle’s compliance with the Accessibility Standards for Public Transportation.

Source) MLIT

(2) Accessibility of Living and Housing Environments

① Accessibility of Housing and Architecture

In addition to supporting the acquirement of accessible housing for the independence or the caring of those such as the elderly and disabled, public housing and Urban Renaissance Agency (UR) rental housing makes accessibility a standard specification, and there are various measures to encourage the private sector to provide Housing with supportive services for the elderly as part of various supportive measures for those such as the elderly and disabled to have safe, comfortable and convenient living arrangements in their local community.

Also for architectural structures used by the general public, including those such as the elderly and disabled, architected to be over a certain scale are required to be accessible in accordance with the “Act on Promotion of Smooth Transportation, etc. of Elderly Persons, Disabled Persons, etc.” and approved specific buildings that meet certain requirements are eligible for support measures such as subsidy programs. For government facilities, the promotion of newly developed advanced accessible government facilities as well as making existing government facilities more accessible is being carried out.

Graphic II-7-1-2

Approvals of Architecture for Specified Designated Building in Accordance with the “Act on Promotion of Smooth Transportation, etc. of Elderly Persons, Disabled Persons, etc.”

Fiscal Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Approval (Fiscal Year)	11	120	229	320	382	366	332	232	280	367	386	348	331	289	255	184	208	130
Approval (Total)	11	131	360	680	1062	1428	1760	1992	2272	2639	3025	3373	3704	3993	4248	4432	4640	4770

Source) MLIT

② Universal Design of Pedestrian Spaces

In accordance with the “Act on Promotion of Smooth Transportation, etc. of Elderly Persons, Disabled Persons, etc.,” areas such as roads and stations squares that connect to facilities such as stations, government facilities, and hospitals must ensure that everyone including the elderly and disabled should be able to pass through comfortably by promoting the universal design of pedestrian spaces through measures such as creating wide sidewalks; lessening unevenness, slopes, and grades; eliminating utility poles; and guiding blocks for the visually impaired.

③ Accessibility of City Parks and Other Areas

For the development of city parks, there are standards and subsidies under the “Act on Promotion of Smooth Transportation, etc. of Elderly Persons, Disabled Persons, etc.” for safe and comfortable usage, like eliminating grade disparities at entrances, exits, and passages as well as ensuring facilities such as restrooms are usable by those such as the elderly and disabled. Also, to ensure that anyone can enjoy natural spaces such as rivers and ports, there are support measures for waterfront development as an integral part of town planning and ensuring the accessibility of passenger ship terminals for ports.

2 Creating an Environment that Supports Child-rearing Under an Low Birthrate Society

(1) Supporting the Balance of Work and Child-rearing

① Supporting the Supply of Housing Suitable for Newly Weds and Child-rearing Households

To ensure that newlyweds and child-rearing households can obtain suitable housing and living environments, the Japan Housing Finance Agency (Incorporated Administrative Agency) uses securitization methods and other financing methods to support the obtainment of high-quality housing ownership and for rental housing, when local government develops rental housing for child-rearing households or subsidizes cheaper rent (regional quality rental housing measures), support is given through local government. Also, integrated development of public rental housing and child-rearing support facilities is being promoted for public sector rental housing.

② Promoting Teleworking

Teleworking is a flexible work style that uses information communication technology for the freedom to work any place or time and promises to reduce the burden of commutes by combining work and living arrangements, realize harmony of livelihood and living (work-life balance), and ensuring business continuity during disasters and other events among other benefits.

“The New Strategy in Information and Communication Technology (IT)” (established May 2010) positions the “Promoting Teleworking” for its potential to create work opportunities for people seeking more diverse means of employment, revitalization of regional communities among other benefits and supports the promotion of fostering an environment for further spreading and firmly establishing teleworking, public awareness and other measures through intergovernmental cooperation.

The MLIT carried out various measures for the spread of teleworking such as quantitative assessment of teleworking

styles as well as the teleworking population, public-private cooperation measures to promote the commoditization of teleworking centers, and hosting seminars designed to spread and promote the adoption of teleworking by companies.

③ Promotion of Transport Services to Support Child-rearing

A guidebook was published for service manners towards taxi drivers that provide transport services for child-rearing support from the perspective of ensuring safety during school commutes to meet the demands to use taxis as part of transport services for child-rearing support to shuttle children to and from their houses and childcare centers/schools.

(2) Creating a Relaxed and Safe Environment for Children to Grow

To ensure the safety and comfort of children and other park users, various facility administrators are made aware of “Guidelines for Safety of Playground Equipment in City Parks (Revised)” and “Pool Safety Standards Guidelines” and programs such as the Social Capital Development Integrated Grant provide focused support to local governments for safety and comfort measures of park facilities.

3 Ageing Society Measures

(1) Creating a Living Environment for the Elderly to Live Comfortably

The Silver Housing Project provides a package including the supply of public housing and other accessible facilities, life support advisors to counsel daily living needs, and emergency response services and as of 2011 is implemented at 882 housing projects (23,679 housing units).

Also, promotion projects for the stabilization of elderly housing support pioneering living and town planning measures for the elderly as well as redeveloping public rental housing projects as the center of regional welfare among other measures. In addition to this public rental housing is being utilized to support coordination with group homes,^{Note 1} welfare, caring, and other services.

(2) Providing Transport Services that Meet the Needs of an Ageing Society

In order to respond to the demand for the transportation disadvantaged such as the elderly and disabled to use hospitals and other care facilities, the implementation of welfare taxis^{Note 2} is being promoted and as of the end of FY 2011, 15,092 vehicles are being operated. Also, the Investment Subsidy to Ensure the Procurement, Maintenance and Improvement Regional Public Transportation is being utilized to support the implementation of welfare taxis needed in regional areas and from FY 2012, universal design taxis that are easy for the elderly and various people are granted preferential measures regarding motor vehicle tonnage tax and vehicle excise tax if the vehicle meets standard specifications and is certified by government. Also, under the revised “Road Transportation Act,” to ensure transportation means necessary for the daily living of regional residents, if services by bus or taxi companies are deemed difficult to provide and the parties of the regional residents agree to the need for private fee-based passenger transport, prefectural governments can operate prefectural fee-based transport or NPOs and other organizations can provide fee-based welfare transport or fee-based transport to isolated areas based on registration and as of the end of FY 2011, 2,959 organizations are implementing such services.

4 Promoting the Support of Pedestrian Travel

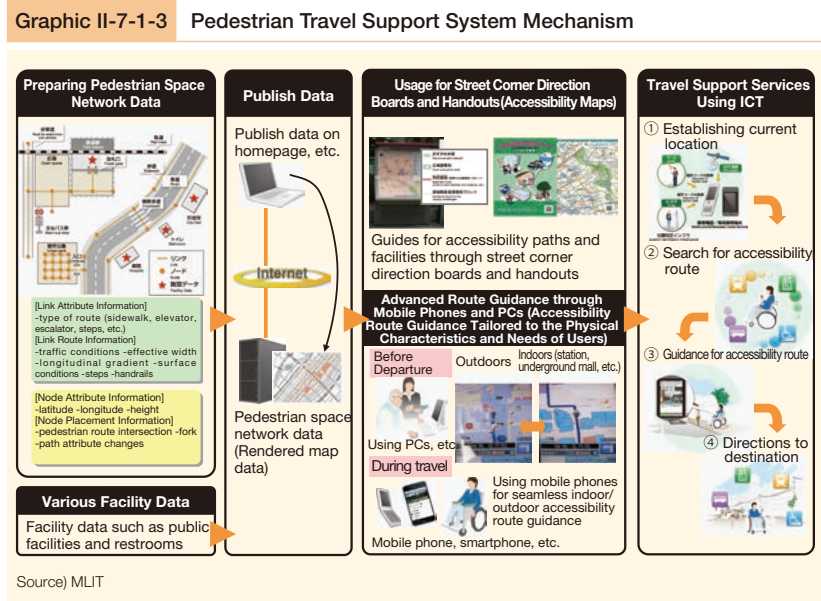
To create an accessible environment where everyone including the elderly and disabled can readily take part in activities toward a universal society, it is important to promote things from the perspective of soft measures and study groups including outside experts are used to utilize Information Communication Technology (ICT) that can be used for accessible

Note 1 Communal dwelling for those such as the elderly and disabled to live independently within regional society

Note 2 Taxi vehicles with lifts and other facilities so that those using wheelchairs or beds (stretchers) can board and disembark as is or taxi vehicles serviced by those with various qualifications such as home care worker.

routing assistance to promote the support of pedestrian travel.

For this reason, a draft guideline implementable by local governments is being prepared for issues such as the maintenance and renewal of services to support pedestrian travel and rules for the distribution of costs between the public and private sector based on the knowledge gained from demonstration experiment projects carried out in five locations nationwide starting with Asahikawa City, Hokkaido.



Section 2 Natural Disaster Measures

Japan’s national land is subject to severe conditions including climate, geography, and geology; almost every year natural disasters such as earthquakes, tsunamis, floods, and sediment disasters occur. Even in 2012, a heavy rainstorm disaster in Kyushu that occurred in July led to massive damages several locations. Also, the importance of natural disaster measures is more urgent in consideration of climate change measures and the experience of the Great East Japan Earthquake, dilapidation measures and proactive disaster prevention and reduction measures must be fundamentally bolstered to solidly further infrastructure development urgently needed to protect the lives and living.

1 Shaping National Land that is Safe and Resilient to Disasters, Enhancing and Strengthening the Framework of Preparedness for Emergency Management

(1) Responding to Climate Change

Regardless of the scale of countermeasures to deal with climate change and variability in the next 20 to 30 years, the temperature will rise and more frequent rains, stronger typhoons, rising sea levels, and an increased fluctuation range of rainfall are expected; counteractive measures to avoid or reduce the floods, sediment disasters, high tide disasters, droughts and other disasters as a result of this are needed. For the implementation of counteractive measures, relevant authorities must cooperate to develop mitigation facilities from a long-term viewpoint as well as measures for evacuation and disaster management to strive for a sustainable and resilient society.

(2) Flood Measures

Many of Japan’s major cities are positioned on low-lying districts that are lower than the river level during flooding, making the latent danger of flood inundation quite high. Water control measures such as expanding the river channel to safely flush away floods, embankments, development of discharge channels, dams to temporarily hold back floods, and artificial ponds have steadily improved the degree of water control safety. However, in July of 2012, a rainstorm disaster in Kyushu caused a levee under the Yabe River’s area of direct administration to break, causing great damages in addition to floods and sediment disasters to occur, raising some new issues. In order to continue responding to major disasters appropriately, we will reaffirm the importance of lessons learned from the Great East Japan Earthquake, that is “there are no limits to disasters” and “human lives are most important” to appropriately combine hard and soft measures to further the prevention and reduction of disasters.

① Preventative Water Control Measures

The occurrence of large scale floods leads to human and economic losses, greatly affecting socioeconomic activities and because the recovery and reconstruction requires a great amount of time and resources, preventative water control measures are important to keep disaster from occurring. For this reason, water control facilities such as levees, excavating river channels, dams, and discharge channels are developed systematically. Also, existing facilities are being maximized with dam renovation technology such as the redevelopment of existing dams as well as restructuring the capacity of several existing dams. In addition, existing levees that are not sufficiently safe from permeative destruction or erosion due to floods are being strengthened.

Super levees are levees that do not break when floods exceed the planned scale; they are also integrated with town building projects and not only form a benevolent living environment that protects the lives of local residents but also lead to securing a wide area evacuation site. Also, following the comprehensive project reassessment of October 2010, the need for all super levees were reevaluated from zero with the greatest importance on “protecting human lives” and areas of need where narrowed to “areas with a concentration of population where a breaking levee has a high probability of causing great human losses.”

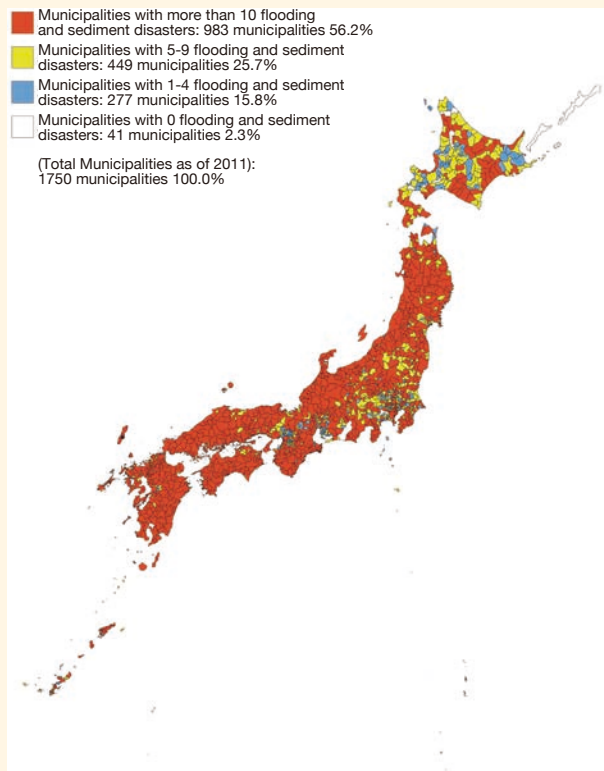
② Preventing the Reoccurrence of Flood Disasters

In recent years, at regions that experienced flooding, river channels are excavated and levees are being built to improve the flow capacity of rivers, drainage pump stations are developed to prevent inside water flooding among other measures are being implemented intensively in a short time span to relieve any concerns about flooding.

③ Flood Control Measures Tailored to River Basin Characteristics

For rivers that experience a significant decline in flood control safety due to river basin development or existing urban areas regularly subject to flood damages, it is important to ensure the water retention and flood dissipation functions of the river basin. Rivers such as these require the promotion of river basin measures and a variety of methods that taken into consideration regional characteristics to ensure safety and comfort.

Graphic II-7-2-1 Flooding and Sediment Disaster Occurrences 2002-2011



Source) MLIT “Flood Statistics Survey”

Graphic II-7-2-2 International Comparison of Flood Control Safety

Country	River Name	Flood Control Safety Goals ^{(Note) 1}	Coverage ^{(Note) 2}
United States of America	Mississippi River Downstream	Around 1/500 ^{(Note) 3}	Around 94% ^{(Note) 4}
United Kingdom	Thames River	1/1,000 ^{(Note) 5}	100% ^{(Note) 5}
Netherlands	The coast including the center of the nation	1/10,000 ^{(Note) 6}	Around 94% ^{(Note) 7}
Japan	Arakawa River	1/200	Around 54%

- (Note) 1 Flood control safety goals: annual recurrence interval set as the development goal of the flood control facility
 2 Development coverage: percentage of levees developed compared to the levees deemed necessary based on river improvement plans
 3 “Sharing the Challenge: Floodplain Management into the 21st Century,” Report of the Interagency Floodplain Management Review Committee to the Administration Floodplain Management Task Force, p.60, 1993.
 4 “Report of the secretary of the army on civil works activities for FY 2008,” Department of the Army
 5 “Strategic Environmental Assessment Environmental Report Summary,” Environment Agency, p.2, 2009.4.
 6 “Flood Defence Act 1996” (<http://www.safecoast.org/editor/databank/File/Flood%20Defence%20Act%201996.pdf>)
 7 “Water in Focus 2004 Annual report on water management in the Netherland,” Ministry of Transport, Public Works and Water Management in co-operation with the partners of the National Administrative Consultation on Water. (<http://www.rijkswaterstaat.nl/rws/riza/waterinbeeld/wib2004e/index.html>)

Source) MLIT

(a) Comprehensive Flood Control Measures

With factors such as the concentration of population following the development of urban areas and peripheral areas as well as increased discharge from flooding rivers, for urban rivers where flood control safety is significantly compromised it is important to carry out comprehensive flood control measures, in addition to river development, such as securing the water retention and flood dissipation functions of the river basin, directing land use in regions at risk of disasters occurring, and establishing a precautionary evacuation framework. As part of these efforts, the development of rainwater harvesting facilities is being promoted through measures such as river basin storage and infiltration projects and tax breaks so that the relevant local authorities can cooperate to further suppress rainwater drainage and measures to reduce civil damages.

In addition, to prevent the disruption of urban functions due to flooding as well as the flooding of underground malls in accordance with the “Act on Countermeasures against Flood Damage of Specified Rivers Running Across Cities,” river administrators, sewage system administrators, and local government are working together to promote river basin flood damage countermeasures such as developing rainwater harvesting and infiltration facilities as well as regulations to suppress the drainage of rainwater.

(b) Localized Downpours (Guerilla Rainstorm) Measures

For localized downpours that exceeds 50mm, 100mm per hour a “100mm/h relief plan” that stipulates measures carried out by the river administrator such as river development and flood basins, sewage development, as well as the placement of rainwater harvesting and infiltration facilities within the housing premises by residents to promote integrated heavy rainfall measures within the region so that the people can live with peace of mind.

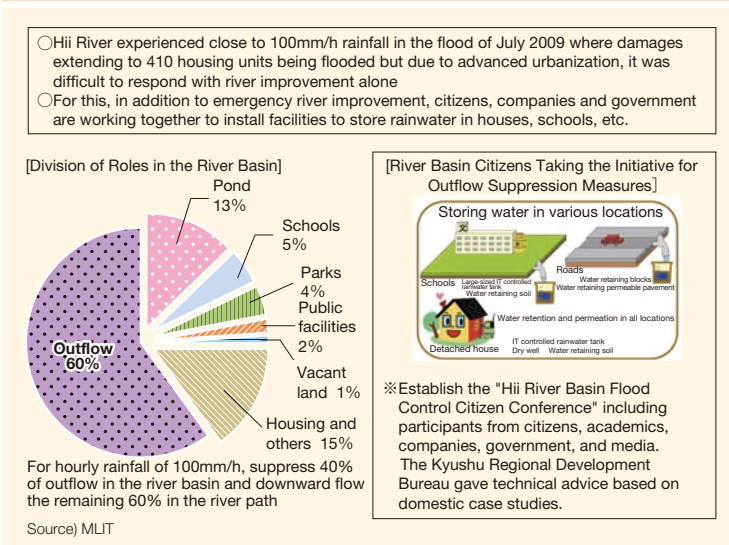
(c) Integrating Land Use Measures with Disaster Mitigation

In accordance with land use conditions, if it is more efficient and effective than developing a consecutive levee, integrated land use that combines the development of a circle levee^{Note} and the regulation of land use through measures such as designation of disaster risk areas is combined in cooperation with local authorities to promote disaster mitigation measures.

(d) Inner Water Measures

To prevent flooding through inner water inundation and strive for the healthy development of cities, the improvement of facilities such as sewer pipes and drainage pump stations are being promoted. However, in recent years, the frequency of concentrated downpours that far exceed planned scales, increased rainwater drainage due to the advancement of urbanization, the increased complexity of the urban landscape including the concentration of population and wealth as well as the increased use of underground spaces make the risk of damage due to inner water inundation even greater. For this reason, measures such as integrated projects for the reduction of sewer flooding damages and integrated projects for inner water emergency measures are being utilized with the cooperation of relevant parties including regional authorities and affected residents to carry out hard measures such as proactively implement rainwater drainage reduction facilities; soft measures such as providing rainfall information, land use regulations, and creation of inner water hazard maps; and self-help initiatives such as the placement of water stops and sandbags as well as evacuation activities in combination for the promotion of integrated flood measures.

Graphic II-7-2-3

Example Measures Based on the 100mm/h Safe Plan for Hii River

Note A levee that surrounds districts with housing and other structures

④ Combining Hard Measures with Soft Measures

(a) Creating and Raising Awareness of Hazard Maps

To raise awareness of the dangers from flooding, work to ensure the effective evacuation of residents, and guide appropriate land use, districts that are likely to be inundated when the river floods (flood forecast districts) are designated and information such as the depth of flooding is publicized in accordance with the “Flood Control Act.”

Also, so that residents can smoothly and rapidly initiate evacuation measures even when flood inundations occur, technical support for the creation and communication of hazard maps is offered to municipalities creating hazard maps designed to give residents necessary information to secure evacuation such as flood information, evacuation areas, and flood forecasts as well as opening a portal site^{Note 1} on the MLIT homepage where all domestic hazard maps can be viewed.

In FY 2012, over 700,000 residents were issued an evacuation call due to the heavy rainfall disaster that occurred during July 2012 in Kyushu, yet in reality proper evacuation measures were not taken, leading to evacuation delays and people being rescued by helicopters prompting a complete overhaul of the “Flood Hazard Map Creation Handbook” published in March 2013 so that municipalities can create practical hazard maps that facilitate the appropriate evacuation behavior of residents.

Flooding forecast areas are already designated and publicized for roughly 98% of the rivers concerned and 95% of municipalities within flood forecast areas already created flooding hazard maps (as of the end of March 2013).

(b) Publicizing Forecasts and Warnings of Flooding and Providing River Information

The Minister of Land, Infrastructure, Transport and Tourism or Prefectural Governor designate rivers with large river basins that are at risk of causing great damages to the nation’s economy or other great losses as flood forecast rivers and during floods issue flood forecasts (including flood warning and advisories) indicating the water level or flow rate jointly with the Director-General of the Japan Meteorological Agency. Also, aside from flood forecast rivers, important middle to small rivers are designated as water level alert rivers and during floods, when the water level reaches evacuation levels (high caution water levels) when evacuation calls are issued, this information is also disseminated. Currently as of March 2013, there are 415 flood forecast rivers and 1,554 water level alert rivers.

Also, assistance is available in close cooperation with prefectures for municipalities in designating the means of communicating flood forecasts to underground malls and facilities used by people with special needs. Additionally, as of March 2013, relevant underground malls in 65 municipalities and facilities used by people with special needs in 541 municipalities are designated in municipal regional disaster prevention plans.

The water level, rainfall, flood forecasts, flood prevention alarms and other river information are collected, processed, and edited in real-time and made available to river administrators, municipalities, residents, and others on the website “Kawa-no Bousai Jouhou (River Disaster Prevention Information)”^{Note 2} to be utilized in issuing warnings and evacuation during floods.

Also, the data broadcast function of digital terrestrial television is being used in cooperation with broadcasters to provide water levels and rainfall information and by March 2013, 49 broadcast stations nationwide are providing such services.

On the observation of rainfall, in addition to the existing C-band radar and ground-based rain gauge to deal with floods and sediment disasters due to the increased frequency of concentrated downpours and localized heavy rainfall in recent years, the new radar network, XRAIN (MLIT’s X-band polarimetric (multi parameter) Radar Information Network)^{Note 3} is being developed, which enables more detailed and real-time rainfall observation, which contributes more appropriate river management and disaster prevention activities. Rainfall information by XRAIN is available on the Internet. XRAIN consists of 27 radar stations, as at July 2012.

⑤ Strengthening the Flood Prevention Framework

Coordination with prefectures and flood prevention administration bodies for joint inspections of levees before flooding season and training exercises for communicating information, seminars for flood prevention technology, and flood prevention drills are carried out to ensure that areas requiring special attention and flood prevention technology is mastered

Note 1 <http://www1.gsi.go.jp/geowww/disapotal/index.html>

Note 2 <http://www.river.go.jp> [PC version], <http://i.river.go.jp> [mobile]

Note 3 Compared to existing C-band radars, observation at higher frequency (every minute), and higher resolution (250m mesh) is possible. Also, time needed for information transmission was reduced from 5-10 minutes to 1-2 minutes.

from the perspective of flood prevention to protect lives and assets, to assist the creation of a flood prevention framework that minimizes damages.

Also, the “Flood Prevention Law” was revised following the Great East Japan Earthquake to newly establish special emergency flood prevention activities carried out directly by MLIT and this was implemented for the heavy rainfall disaster that occurred in Kyushu, July 2012 as well as disasters triggered by heavy rain in the Kinki Chubu region in August of the same year.

⑥ Strategic Maintenance and Management of Rivers

The condition of rivers and facilities are assessed and appropriate maintenance and management is carried out in accordance with any changes to ensure that the river administration facilities developed function as intended during floods and other situations.

In the course of river development carried out, the number of facilities such as levees, weirs, floodgates, and drainage pump stations under management greatly increased and the age degradation of these facilities is also advancing. Under these conditions, planned maintenance and management is being carried out in accordance with the “Technical Standards for River Works: Practical Guideline for Maintenance and Management (Rivers)” and for rivers administered by the nation, a “River Maintenance and Management Plan” was created in June 2012. Also, for river infrastructure, migration to condition-based maintenance is being implemented where degradation conditions and its progress is monitored through inspections so that measures are taken at appropriate moments as well as move to extending facility life cycles and renewal in a planned manner; the Priority Plan for Social Infrastructure Development states that by FY 2016, for major river infrastructure administered by the nation, 100% of these will create long lifecycle plans. In addition, necessary technological development for extending lifecycles will be furthered as well as deliberate in cooperation with prefectures on the technical standards for middle to small rivers administered by prefectures for appropriate maintenance and management in addition to technical support through permanent consultation services made available by regional development bureaus.

In recent years, the vegetation of rivers is drawing attention as a biomass resource, and an open type harvesting test guideline was drafted to make it widely available to the private sector for testing to begin.

In July 2012, for the purpose of conserving national land and securing the sustainable safety of regional society the “Subcommittee for Deliberating Future River Administration to Secure Sustainable Safety” was established under the Council for Social Infrastructure River Subcommittee to deliberate the future of river administration.

⑦ Measures Against Illegally Moored Vessels

Illegally moored vessels on the river obstruct the progress of river construction, block flow during floods, and cause damages to river administration facilities. Also, fuel leakage can cause water quality accidents and pollution in addition to obstructing access to other citizens, noise pollution, and destruction of scenery. Such illegally moored vessels are directed to move to legal mooring facilities or removed.

Column	Emergency Measures Based on the Emergency Inspection Results of River Levees
<p>The heavy rainfall disaster in Kyushu that occurred in July 2012 resulted in unprecedented downpours across the region and the number of fatalities and missing persons reached 34 people and a great number of housing units were affected, causing great damages.</p> <p>At rivers under national administration, ten rivers experienced unprecedented high water levels and the Kagetsu River of the Chikugo River System and the Yabe River of the Yabe River System experienced burst river levees in addition to other river levees overflowing for a total of seven rivers flooding. Large-scale disasters due to levees breaking in rivers under national administration last occurred in 2004 at Maruyama River (Toyooka city, Hyogo prefecture).</p> <p>Regarding the cause of these disasters, for the Kagetsu River of the Chikugo River System was due to erosion and scouring from river water specific to rapid current rivers. Also for the Yabe River of the Yabe River System, levees broke after water levels went beyond the peak and leaked areas were discovered along with</p>	

the jetted sand it entails in paddies behind the levee aside from the broken sections. For this reason, a “Yabe River Levee Research Committee” was formed by academic experts to closely investigate the disaster mechanism. As a result, the breaking of the Yabe River levee was mainly the compound result of factors such as structure of the geological layer and external force of the flooding causing piping from the foundation ground.

Following the observation of various disaster types from the Kyushu heavy rainfall disaster, the safety against three disaster types by factor (① levee breaks caused by erosion, ② river bank denudation and bank protection damage, and ③ overflow disasters due to decline in flow capacity) were assessed as part of a complete emergency re-inspection for all domestic levees and the results were made widely available in September 2012.

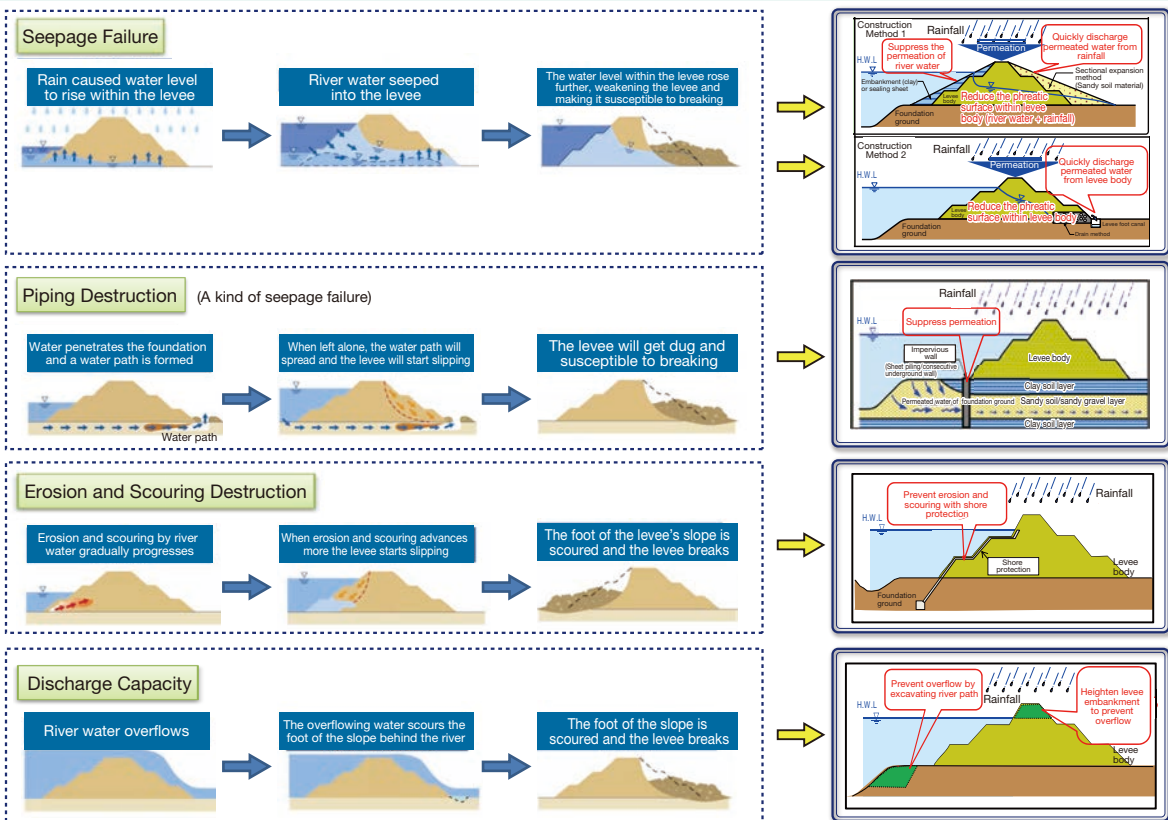
The areas identified as requiring remedial measures among domestic rivers, starting with sections of higher emergency priority, underwent various measures such as drain works and seepage control work for erosion, foot protection work and bank protection work for denudation measures, and embanking and river channel excavation for flow capacity measures and these efforts will continue to be implemented.

Levee Break Condition of the Yabe River of the Yabe River System



Source) MLIT

Mechanism of the Levee Break and Emergency Measure Illustration



Source) MLIT

(3) Countermeasures against Sediment-related Disasters

In Japan, sediment-related disasters such as debris flow, landslides, and slope failure caused by concentrated heavy rainfall and earthquakes averaged approximately 1,000 cases per year (2002-2012) resulting in severe damages. Also, sediment-related disasters claim a large share of victims amongst natural disasters. For this reason, structural sediment control facilities in priority areas with an acute need for measures; creating a safe and appropriate warning and evacuation frameworks consisting of self, mutual, and government assistance; efficient sediment-related disaster measures consisting of integrated soft and hard measures are being promoted to reduce the number of victims claimed by sediment-related disasters.

① Fundamental Countermeasures against Sediment-related Disasters

Rivers with a headstream area in a dilapidated mountain terrain can cause extensive damages to the entire river basin from the sediment discharge it creates. To protect the national land from such sediment disasters and strive to protect human lives, the development of sediment control-related facilities is being promoted.

② Emergency Countermeasures against Sediment-related Disasters in Sediment Disaster Affected Areas

The concentrated development of sediment control-related facilities in the area affected by sediment disaster affected and its surrounding regions will help prevent a reoccurrence of disasters in areas stricken by extensive sediment disasters.

③ Emergency Countermeasures against Sediment-related Disasters for People Requiring Assistance During Disasters

For facilities used by those requiring assistance during disasters such as hospitals, nursing homes, and kindergartens located in areas at risk of sediment disasters, the development of sediment-related control dams and other sediment-related disaster mitigation facilities are heavily prioritized.

Also, based on the “Act on Promotion of Sediment Disaster Countermeasures for Sediment Disaster Prone Areas (Sediment Disasters Prevention Act),” the development of facilities used by those requiring assistance during disasters is restricted in sediment-related disaster prone areas.

④ Countermeasures against Sediment-related Disasters for Urban Areas Near Mountain Base Slopes

In order to enhance the safety against sediment-related disasters in urban areas and create an urban environment rich in greenery, forestry (green belts) is planted on the mountain base slopes near urban areas. In FY 2012 this was implemented in the Rokko area (Hyogo prefecture) among 13 areas.

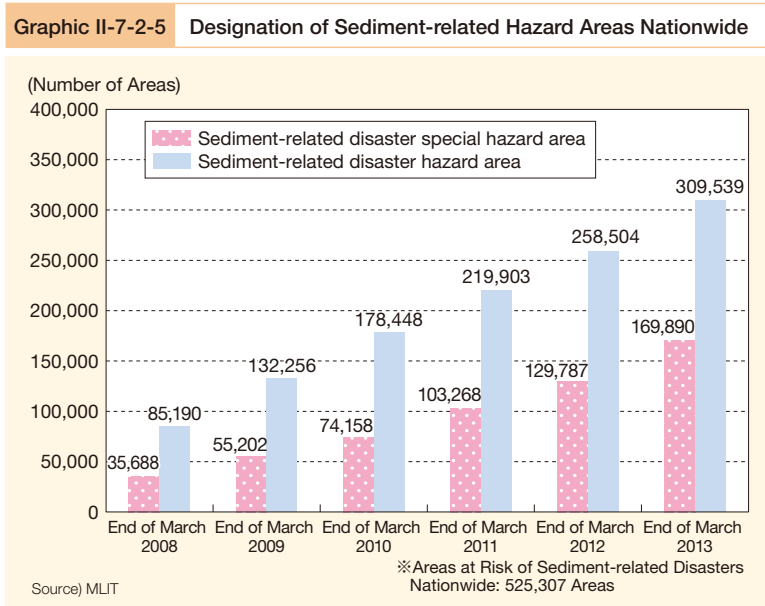
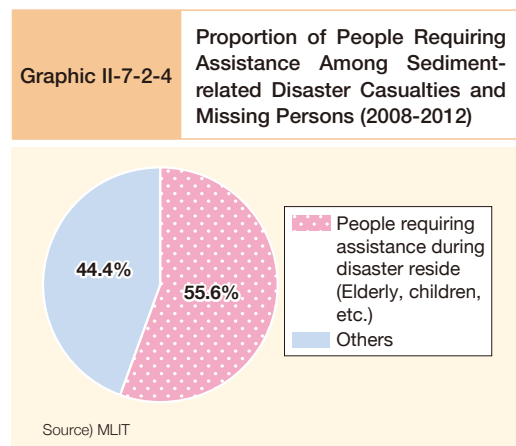
⑤ Countermeasures against Sediment-related Disasters that Improve Regional Disaster Prevention

In hilly and mountainous regions where sediment-related disasters can cause devastating damage to the society and economy, the warning and evacuation system of villages are strengthened and the conservation of important facilities and disaster prevention backbone villages are being promoted.

⑥ Promoting the Sediment Disasters Prevention Act

(a) Promoting the Designation of sediment-related disaster hazard areas

In accordance with the “Sediment Disasters Prevention Act,” sediment-related disaster hazard likely to experience sediment-related disasters that may cause harm to the body of residents are designation and in such districts,



warning and evacuation system will be developed and in sediment-related disaster prone areas where sediment-related disaster can damage architectural structures and cause undue bodily harm to residents, certain development activities are restricted and there are additional structural requirements for architecture in addition to other soft measures. Also, guidelines and case studies are provided for the development of warning and evacuation system as well as the creation of hazard maps to further the development of warning and evacuation system as well as hazard maps against sediment-related disaster in the municipalities.

(b) Prompting the Relocation of Housing at Risk

At risk housing located near cliffs in danger of collapsing are prompted to relocate using the program for relocating at risk housing located near cliffs. In FY 2012, this program was used to eliminate 22 at risk housing units and 16 housing units were created to replace at risk housing.

⑦ Countermeasures for Large Scale Sediment-related Disasters

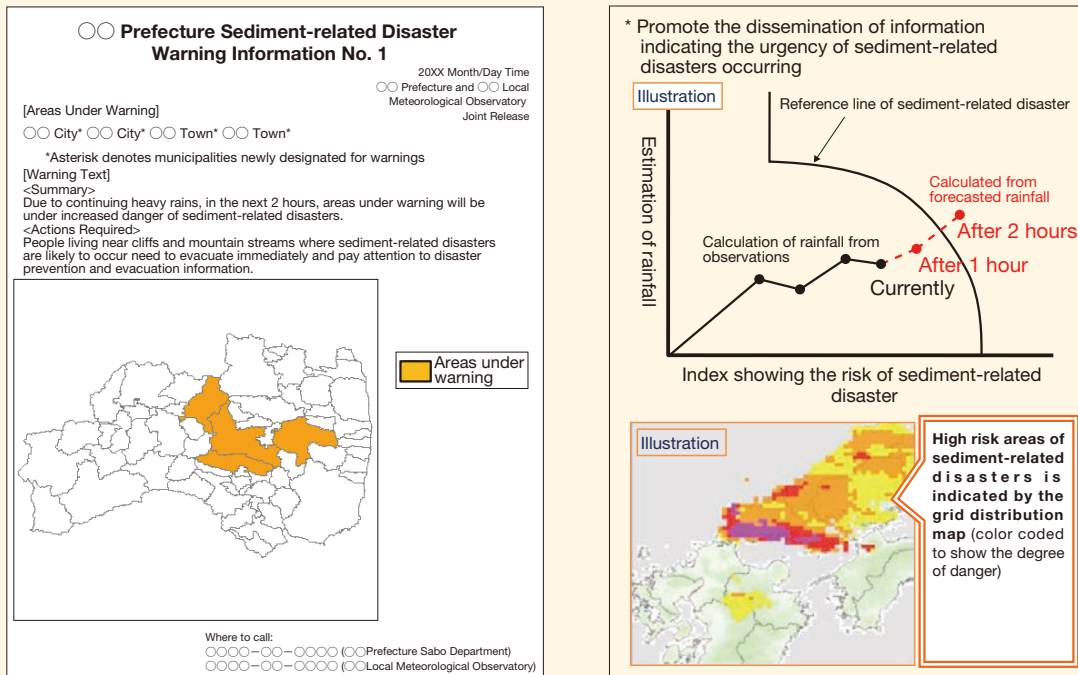
So that municipalities can appropriately decide on directing resident evacuation under acute circumstances due to large scale sediment-related disasters such as river blocked (natural dams), debris flow from volcanic eruptions, and landslides, the “Sediment-related Disasters Prevention Law” revised in May 2011 was put into effect, an emergency survey was carried out by national government and prefectures in which the results were used to provide municipalities with the possible districts and timing among the land where sediment-related disasters are expected to ensure that the lives and health of national citizens are protected from sediment-related disasters.

Also, regarding deep catastrophic landslide, in September 2012 a map evaluating the risk of deep catastrophic landslide by mountain stream was published so that it could be used to deliberate countermeasure facilities as well as warning and evacuation measures.

⑧ Announcing Sediment-related Disaster Warning Information

When the risk of sediment-related disasters increases due to heavy rainfall, sediment-related disaster warning information is jointly issued by prefectures and the Japan Meteorological Agency and disseminated through the fire protection and disaster preparedness section of the prefecture to assist the head of the municipality with deciding on giving evacuation orders as well as allow residents to evacuate on their own.

Graphic II-7-2-6 Sediment-related Disaster Warning Information



Source) Japan Meteorological Agency

Column

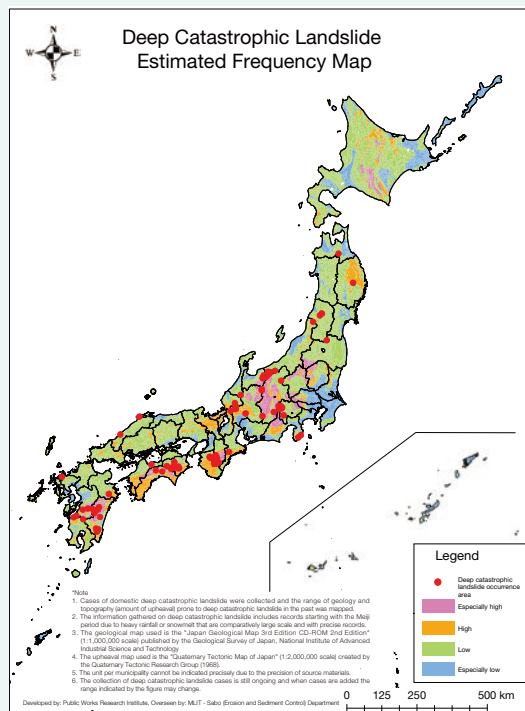
Efforts for countermeasure against deep catastrophic landslide

Deep catastrophic landslides are a phenomenon where a section of mountain terrain or hilly area's slope collapses at not only weathered topsoil layer but also the bedrock. Deep catastrophic landslides occur very rarely amongst sediment disasters but they usually collapse on a comparatively grander scale, such as the river channel blockage caused by the Iwate-Miyagi Nairiku Earthquake in 2008 or the one that occurred in Kii Peninsula following Severe Tropical Storm Talas in 2011, causing great damages so that there was a need to further investigate and research disaster prevention measures.

Therefore, in August 2010, a "Deep Catastrophic Landslide Estimated Frequency Map" based on statistical analysis of areas where deep catastrophic landslide occurred and its relation to geographic and geological conditions; additionally, in September 2012, a "Deep Catastrophic Landslide Susceptibility Map (Small Catchment Level)," mainly

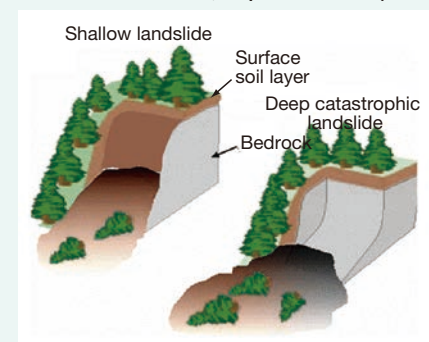
around regions where the estimated frequency of deep catastrophic landslide is especially high, indicating relative degree of danger of deep catastrophic landslide in districts where conditions such as geology are similar.

Future efforts regarding deep catastrophic landslide will involve the placement of sensors to detect the occurrence of large scale landslides to strengthen warning and evacuation frameworks for deep catastrophic landslide mainly in regions where the estimated frequency of deep catastrophic landslide occurring is especially high on the deep catastrophic landslide Estimated Frequency Map. In addition, a model district will be established to use the deep catastrophic landslide Mountain Stream Level Evaluation Map to establish things such as appropriate warning and evacuation frameworks including evacuation paths, areas, and methods as well as prioritization of measures in evaluating hard and soft measures against deep catastrophic landslide.

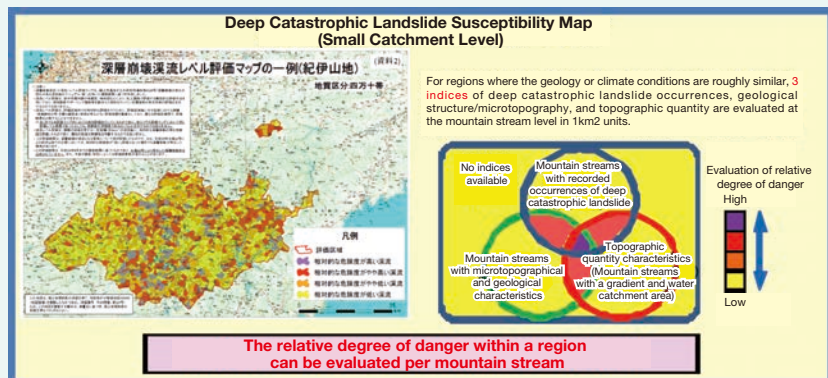


Source) MLIT

Damages Due to a Landslide Caused by Deep Catastrophic Landslide (Gojo City, Nara Prefecture, September 2011)



Source) MLIT



Source) MLIT

(4) Volcanic Disaster Countermeasures

① Countermeasures for Sediment Disasters-related Following Heavy Volcanic Activity

For countermeasures against wide area and large-scale sediment-related disasters such as volcanic mudflow and debris flow following heavy volcanic activity such as eruptions, sediment-related control dams are developed. In Sakurajima, heavy volcanic activity is ongoing since 2009 and even light rainfall intensity or small volumes of continuous rainfall is enough to trigger debris flow so continued monitoring and observation as well as debris excavation from the sediment-related control dams is being implemented. Also, Asama Mountain is currently in a state where a middle scale eruption can occur at any time and in preparation for when volcanic activity begins, directory control volcanic sabo works project is being implemented since FY 2012. At Kirishimayama (Shinmoedake), volcanic activity started in January 2011 and since considerable ash

fall was observed, an emergency survey was implemented in accordance with the “Sediment Disasters Prevention Act,” and information regarding the areas and timing where sediment-related disasters were expected was shared with the municipalities. Also, regarding volcanic hazard maps, these are published for 37 volcanoes where the social impact due to volcanic activity is the greatest.

② Drafting a Sabo Plan for Urgent Measures for Volcanic Disaster Reduction

To reduce the damage due to sediment disasters from volcanic eruptions, relevant authorities are coordinated per volcano, for emergency hard measures such as the development of sediment control dams and emergency debris excavation as well as emergency responses such as real-time volcano sediment control hazard maps to delineate dangerous areas as part of the promotion of drafting a Sabo Plan for Urgent Measures for volcanic Disaster Reduction consisting of hard and soft measures.

③ Japan Meteorological Agency Initiatives

To prevent and reduce volcanic eruption disasters, all domestic volcanic activity is monitored, and volcanic warnings and other rapid and timely information are issued. Especially for the 47 volcanoes chosen by the Coordinating Committee for Prediction of Volcanic Eruption as “volcanoes in need of more intensive monitoring and observation for volcanic disaster mitigation,” observation facilities are developed and volcanic activity is being monitored around the clock. Also, through the joint review of each volcano’s evacuation

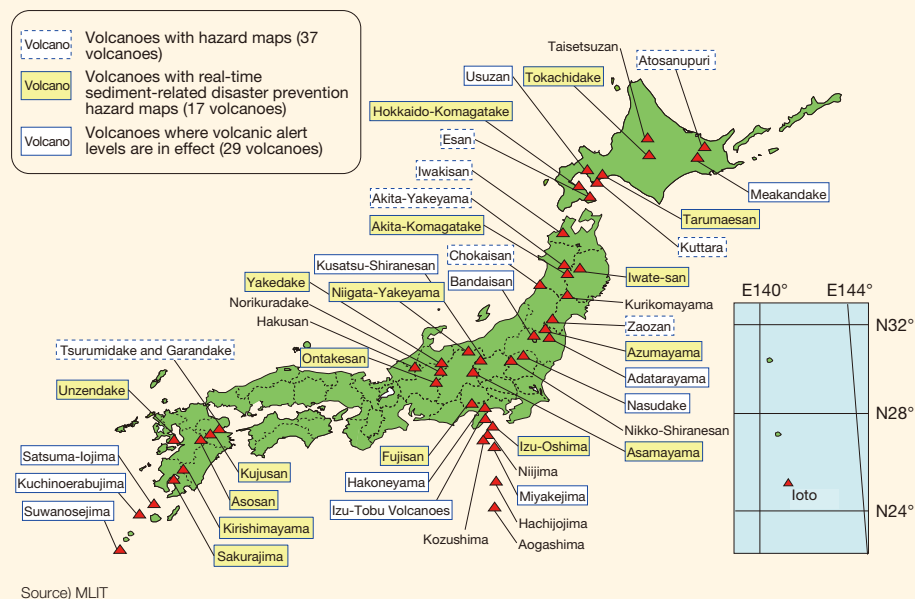
Eruption of Kirishimayama (Shinmoedake) (January 2011)



Source) MLIT

Graphic II-7-2-7

Development level of volcanic hazard maps, real-time sediment disaster prevention hazard maps, and volcanic alert levels of 47 volcanoes specified as “Volcanoes in need of more intensive monitoring and observation for volcanic disaster mitigation” by the Coordinating Committee for Prediction of Volcanic Eruptions”



Source) MLIT

plan under the volcano disaster prevention council, volcanic alert levels (operated at 29 volcanoes as of the end of March 2013) are being initiated and improved.

④ Japan Coast Guard Initiatives

Precursor phenomenon to the eruption of volcanoes in sea area, such as discolored water, is observed and such information is noticed to mariners. In addition, comprehensive surveys are conducted to compile basic information on volcanoes in sea area for the prediction of eruptions. Monitoring of crustal movements by GPS at isolated islands in the south part of Kanto district is also conducted.

⑤ Geospatial Information Authority of Japan Initiatives

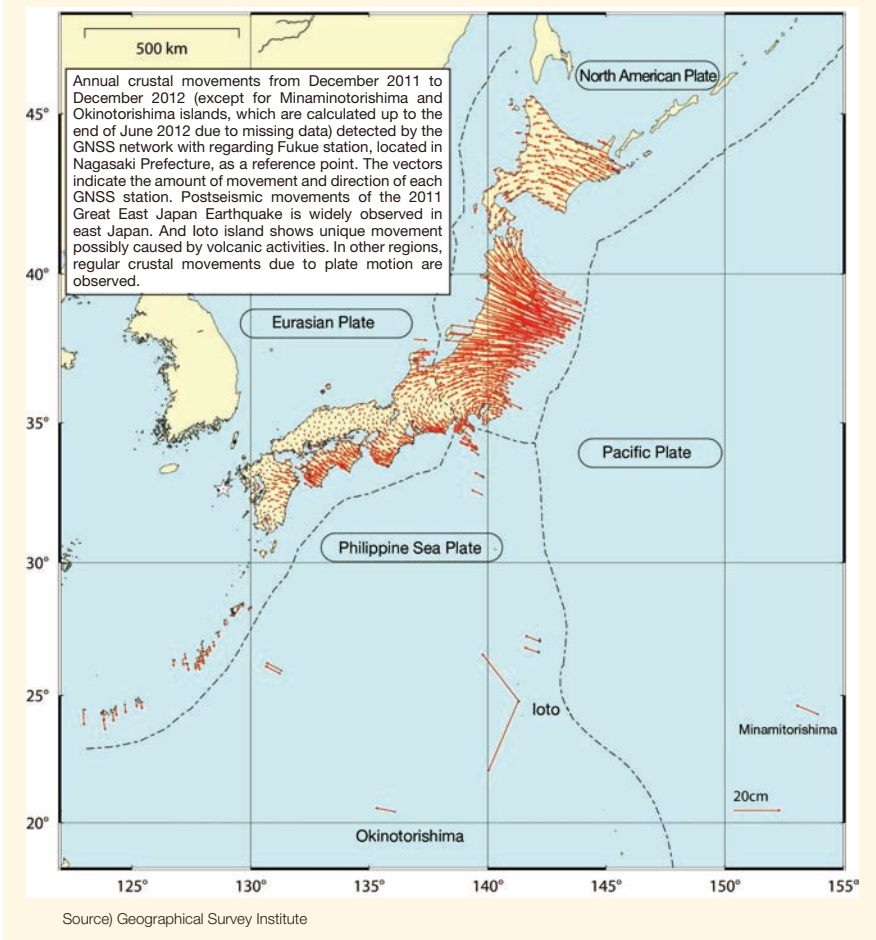
(a) Improved Observation and Monitoring of Volcanic Activities

Three dimensional crustal movements around some active volcanoes are continuously monitored by analyzing data of, such as permanent GNSS^{Note 1} stations, automatic distance and angle measurement devices and Remote GNSS Monitoring Systems (REGMOS). In addition, GNSS data from other institutions are also processed integrally for denser monitoring. In Ioto island, which is well known by its active volcanic activity, large upheaval (exceeded 1m in total) was observed from 2011 to April 2012.

(b) Research on Natural Disasters Following Volcanic Eruptions

Besides monitoring the volcanic activities by using data of GNSS or SAR^{Note 2} interferometry GSI has been conducting researches in various fields not only for understanding the mechanism but also for improving the technique of observation and analysis.

Graphic II-7-2-8 Land Movements of Japan Archipelago Captured by Continuous GNSS Observation



(5) Storm Surge and Denudation Measures

① Promoting Storm Surge and Tidal Wave Measures

To protect human lives and assets from storm surges and tidal waves caused by frequently occurring storm surges, a combination of hard and soft measures are being promoted such as the development and repair of coastal levees and the issuing of flood prevention warnings.

② Promoting Coastal Erosion Measures

Since a variety of factors contribute to coastal erosion across the nation, the administrators of rivers, coasts, shipping

Note 1 Global Navigation Satellite Systems

Note 2 Technology that monitors changes in the earth's surface from artificial satellites in space.

ports, and fishing ports are coordinating to implement measures such as sand bypasses^{Note 1} and sand recycling.^{Note 2}

③ Providing Disaster Prevention Information Regarding High Tide Levels

To enhance disaster prevention activities at municipalities, the Japan Meteorological Agency provides each municipality with storm surge warnings and advisories.

Also, to assist victims and aid restoration efforts in regions that ground subsidence occurred following the Great East Japan Earthquake, an “Hourly Tide Level Calendar” consolidating astronomical tide level (forecast values for tide level) is published along with other information regarding high tide levels.

(6) Tsunami Measures

① Promoting Tsunami Measures

In preparation for the largest scale tsunami disasters following great earthquakes along the Nankai Trough, building regional tsunami disaster prevention through multiple defenses combining hard and soft measures against the biggest tsunamis is being advanced and regional authorities are being supported for measures such as establishing tsunami flooding projections and drafting evacuation plans.

Also, as a lesson from the Great East Japan Earthquake, relevant ministries and agencies worked closely to reevaluate the hazard map creation manual.

For tsunamis with a comparatively high rate of occurring (once every several decades to every one hundred and several decades), coastal levees are being developed along with earthquake resistant measures. In case of occurrence, coastal levees and breakwaters with a structure that steadfastly maintains effectiveness even when the tsunami flows over the levee crown will be developed and at the three major ports where population and functions are concentrated, protection standards reflecting the likelihood of high tsunamis with a comparatively high rate of occurring will be evaluated and also the automation and remote controllability of floodgates and land locks will be promoted.

Also, specified ports (85 ports) under the “Act on Port Regulations” have established a “Council on Tsunami Measures for Ships” to further improve tsunami measures for ships at each of the ports with the cooperation of relevant organizations.

For fluvial tsunami measures, in consideration of the liquefaction of levees and tsunami river reversal damages by the Great East Japan Earthquake as well as floodgate operators stricken by disaster, measures such as raising river levees, earthquake resistance and liquefaction measures for levees, automation and remote operation of floodgates will continue to be promoted.

For the four river systems in the Tohoku Region, the lessons learned from the Great East Japan Earthquake will be applied to the formulation of earthquake and tsunami measures, geographic changes to the surrounding river mouth area such as land subsidence following earthquakes will be reflected in changes to the “Basic Policy for River Improvement” and the “River Improvement Plan” that follows the basic policy will be formulated and changed, and initiatives for regional reconstruction and town planning such as the development of river levees in the river mouth area will be promoted in coordination with the region.

For the tsunami measures of airports, in preparation for great earthquakes along the Nankai Trough, for airports that may be affected by tsunami disasters, the formulation of tsunami evacuation plans for the protection of human lives was carried out. Following this, rapid restoration measures to restore airport functions as soon as possible in the event of a tsunami disaster will be evaluated.

For the tsunami measures of railways, the conditions of evacuation guidance when tsunamis occurred after the Great East Japan Earthquake will be inspected and fundamental thinking for evacuation (speedy evacuation is the most effective and important measure, etc.) for the largest scale tsunamis following something like the great earthquakes along the Nankai Trough will be reflected in the response guidelines and case studies compiled for passenger railways to secure safety when tsunamis occur to promote initiatives by railway companies.

Note 1 When the transport of sand is cut off by coastal structures, this construction method takes the sediment accumulated on the upper hand side to move and supply it to the lower hand side coast to restore sands.

Note 2 This construction method takes the sand accumulated on the coast along lower hand side of the flow and restores it to the upper hand side of the coast subject to erosion to restore sands.

② Providing Disaster Preparedness Information Regarding Tsunamis

In order to strive for the reduction of disasters caused by tsunamis, the Japan Meteorological Agency is monitoring earthquake activities and sea levels in real time around the clock in order to make speedy and appropriate announcements for tsunami warnings and information.

Taking the issues made apparent by the Great East Japan Earthquake, the Japan Meteorological Agency (JMA) emphasizes the word “huge” for tsunami warnings in the case of great earthquakes over magnitude 8 to alert people of the state of emergency as part of new tsunami warnings and other informational wording starting in March 2013.

Also, to make the announcements of tsunami warnings more reliable and execute them rapidly but surely, broad-band strong-motion seismometers that can measure great earthquakes were installed domestically (80 locations nationwide) and 3 DART buoys (water-pressure gauges) were installed in 3 locations off the Pacific coast of the Tohoku Region for utilization in updating tsunami warnings and for offshore tsunami information.

As of March 2013, JMA monitors conditions with 36 offshore-water-pressure gauges, 15 GPS buoys, and 173 coastal tsunami observation points, and effectively utilizes tsunami information.

Additionally, in coordination with relevant agencies, a manual for the creation of tsunami and high tide hazard map and the compilation of case studies is provided as one of the measures against large-scale disasters such as great earthquakes along the Nankai Trough.

③ Tsunami Evacuation Measures

In the future, since there are fears of tsunami disasters being triggered by great earthquakes starting with great earthquakes along the Nankai Trough, the use of person trip surveys and other basic urban planning information to evaluate the evacuation path in urban areas based on the areas forecasted to experience flooding by tsunamis as well as the appropriate location of evacuation facilities was investigated.

④ Development of Parks and Greenery that Effectively Function to Reduce Tsunami Damages

Taking the lessons learned from the Great East Japan Earthquake into account, “The Technical Guidelines for Development of City Parks Towards Reconstruction from the Great East Japan Earthquake” was formulated in March 2012 for utilization by local government in considering town building plan for reconstruction in which parks and greenery is considered to have four functions, that of multi-layered defense; evacuation path and evacuation space; assisting restoration and reconstruction; and disaster prevention education, so the concept of planning and designing parks and greenery to realize disaster mitigation effects is presented.

⑤ Tsunami Measures for Government Facilities

Government facilities act as the central facility for disaster emergency measure activities as well as temporary evacuation space and is something that contributes to the rescue of human lives, therefore securing necessary functions when tsunamis and other disasters occur is important.

In February 2013, the Council for Social Infrastructure prepared a report on securing functions in government facilities in preparation for great tsunamis and the combination of hard and soft measures indicated by this report for tsunami measures will be used in coordination with the organizations that operate and maintain government facilities to promote integrated and effective tsunami measures.

(7) Earthquake Measures

① Improving the Earthquake Resistance and Safety of Housing and Architecture

Regarding the nation’s basic policy on the amended “Act for Promotion of the Earthquake Proof Retrofit of Buildings (Building Retrofitting Promotion Act),” the goal for improving the share of earthquake resistant houses and buildings used by many people is set to go from 75% in 2003 to at least 90% by 2015 and for the “Housing Basic Plan” a new goal of making 95% of all houses earthquake resistant by 2020 was set and currently guidance for buildings is being strengthening to promote earthquake resistance. In FY 2012, for projects to create a safe supply of housing and buildings, subsidies for earthquake resistant retrofitting were increased and temporary expansion measures were extended for the earthquake resistant retrofitting of housing and buildings as part of the efforts to strengthen the earthquake resistance of housing and buildings.

② Promoting the Earthquake Resistance of Housing Land

To reduce the damages due to the sliding collapse of embankments during large earthquakes, for new embankment housing land, the amended “Act on Regulation of Residential Land Development” establish stricter technical standards

and for existing housing land, housing land earthquake resistance promotion projects are being used for surveys to designate developed housing land disaster prevention districts and carry out preventative construction. For liquefaction measures, technical evaluations are being conducted.

③ Implementing Danger Assessments for Housing Land in Disaster Stricken Areas

To prevent secondary disasters and ensure the safety of residents for housing land, an operation manual was created to evaluate the degree of danger swiftly and accurately after disaster strikes, in addition to frameworks being developed in cooperation with the Disaster Stricken Housing Land Danger Assessment Liaison Council consisting of prefectures and designated cities.

④ Urgent Development of Densely Built-Up Areas

Densely built-up areas with issues regarding disaster prevention and living environment are an urgent issue that requires immediate improvements. The Housing Basic Plan (National Plan) stipulates that the area of densely built-up areas that are conspicuously dangerous when earthquakes occur should be mostly eliminated by 2020.

To realize this, fireproofing architectural structures along trunk roads to cut off fire paths and serve as evacuation paths in combination to form a skeletal disaster prevention axis (disaster prevention axis) and the development of disaster prevention parks to serve as evacuation areas, disaster prevention block improvement projects, and integrated housing and urban development projects will be used to eliminate decrepit architecture and joint rebuilding of fireproof architecture, expansion of narrow roads to improve evacuation and firefighting efforts among other small measures to improve the disaster prevention qualities of densely built-up areas and promote the development of the housing environment.

⑤ Securing Open Space

To improve disaster prevention functions and achieve safer and comfortable town building, the development of disaster prevention parks is being promoted to serve as the center of restoration and reconstruction when earthquake disasters occur, center of disaster prevention as a relay hub for living supplies, and as an evacuation area to protect the lives of evacuees from urban fires. Also, a disaster prevention block improvement project that integrates the implementation of developing a disaster prevention park and the surrounding urban area is being implemented in nine regions including Shinkawa Disaster Prevention Park (Mitaka City, Tokyo Metropolis).

⑥ Promoting the Development of Government Facilities as Disaster Prevention Centers

Government facilities need to ensure comprehensive earthquake resistance safety, not only ensure the safety of visitors but also to fully function as the central facility for disaster emergency measure activities when large scale earthquakes occur. For this reason, goals for making government facilities earthquake resistant are set and their development is being promoted in a planned and focused manner and in FY 2012, the Kobe Regional Joint Government Building.

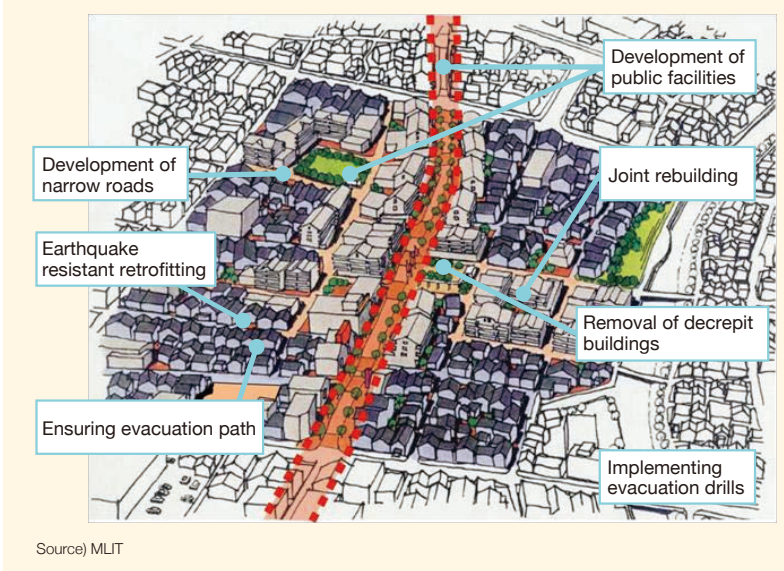
⑦ Improving the Earthquake Resistance of Public Works facilities

For river works, earthquake resistance inspections are carried out and necessary measures are promoted so that levees, floodgates, and other river structures remain functional even under what is referred to as level 2 seismic movement.

For coastal works, earthquake resistance measures are promoted in regions requiring large-scale earthquake measures so that their functions are not damaged before tsunamis arrive.

For road works, to ensure smooth emergency and rescue activities, transport emergency supplies, and emergency transport essential to recovery efforts when earthquake disasters occur, important roads such as emergency transport roads are subject to seismic strengthening of bridges and undergrounding of cables.

Graphic II-7-2-9 Development Illustration of Densely Built-Up Areas



For port works, to ensure the transport of emergency supplies and evacuees when a large-scale earthquake occurs, development of primary wide area disaster prevention bases and earthquake resistant quays as well as the seismic strengthening of harbor roads that connect to emergency transport routes, developing greenery and other open spaces is being promoted.

For airport works, we make the most important facilities earthquake-proofing, to ensure the essential functions of air-traffic control and basic facilities. “The most important facilities” includes the airport which considered to be important for the maintenance of aviation network, and continuity securement of the business activity. Also, it will be the important base for emergency transportation in the time of disaster.

Regarding rail works, for the purpose of ensuring the safety of railway users when disasters occur, to prevent collapses due to large-scale earthquakes such as a direct hit earthquake of the Tokyo metropolitan area, elevated bridge pillars, central pillars of underground tunnels, bridges, main terminal stations where multiple lines connect are subject to seismic strengthening.

For sewage works, to ensure the functions required of sewers during earthquakes, “disaster prevention” such as strengthening the earthquake and tsunami resistance of pipes and water treatment facilities that connect disaster prevention bases with treatment plants and “disaster mitigation” which aims to minimize damages in anticipation of disasters striking are being combined for the promotion of integrated earthquake measures.

⑧ Sediment-related Disaster Countermeasures against Large-Scale Earthquakes

Based on the “Future Direction of Sediment-related Disaster Countermeasures” published in July 2011, in addition to responses to the Great East Japan Earthquake, for regions where great earthquakes along the Nankai Trough are highly likely to strike, fundamental measures to protect important traffic networks and community infrastructure, regional bases of disaster prevention, and evacuation areas essential to emergency and recovery activities from sediment-related disasters are being promoted.

⑨ Japan Meteorological Agency Initiatives

To prevent and reduce disasters due to earthquakes, domestic seismic activities are under 24 hour observation to provide rapid and accurate Earthquake Early Warnings and earthquake information. For Earthquake Early Warnings, the experiences from the Great East Japan Earthquake are being reflected for more appropriate announcements by strengthening the power supply and communication facilities of earthquake observation sites and improving the software of the calculation systems. Additionally, to improve the accuracy of forecasts and accelerate the issuing of information, the data from seismometers placed by related organizations in the sea and underground is being prepared to be integrated into the calculation system.

Also, for the goal of providing effective information for the initial response immediately after an earthquake such as rapidly assessing the human and material damages caused by long-period ground motion, the practical details of such information was deliberated and observation information on long-period ground motion is being issued on a trial basis since March 2013.

⑩ Japan Coast Guard Initiatives

To contribute to earthquake research, observations of seafloor crustal movements are conducted on the landward slope of the major trenches around Japan, such as the Japan Trench and the Nankai Trough where the large earthquakes have repeatedly occurred. To monitor crustal movements GPS observations are also conducted in coastal areas and isolated islands in the south Kanto district.

⑪ Geospatial Information Authority of Japan Initiatives

(a) Observing Crustal Movements and Strengthening Monitoring Frameworks

Monitoring of crustal movements using data of such as continuous GNSS observations of 1,240 permanent GNSS stations, on-site GNSS surveying and leveling is carried out all over Japan and especially boosted in some regions designated as possible danger areas in earthquake disaster prevention measures.

(b) Research on Natural Disasters Caused by Earthquakes

From the results of geodetic observation such as GNSS and interference SAR, the mechanism of earthquake is elucidated. GSI has continuously conducted research and development to improve the precision of observations and analysis. Also, basic data of the national land’s geographic information and past disaster history including seismic intensity are jointly analyzed in order to develop techniques of quick collecting and providing disaster information when disasters occur. Additionally, GSI operates both the Coordinating Committee for Earthquake Prediction, which is for the

purpose of exchanging data and information in the field of earthquake prediction as well as conducting academic deliberations about them between government agency, universities and relevant organizations, and the Coastal Movements Data Center, which is for the purpose of collecting and providing tidal records observed by relevant organizations to contribute to the research of crustal movement.

⑫ Stranded Commuter Measures

If a large-scale earthquake occurs in a major city, urban functions will be paralyzed and more commuters will be stranded than the Great East Japan Earthquake, therefore to secure the safety of evacuees and stranded commuters in regions where urban functions are concentrated, the “Act on Special Measures Concerning Urban Reconstruction” was amended in April 2012 and the “Urban Reconstruction Safety Protection Plan System” was newly established.

Across the nation, 63 regions are designated as urban reconstruction emergency development regions to host a urban reconstruction emergency development council, create a urban reconstruction safety protection plan, conclude agreements on urban reconstruction safety protection facilities, and carry out deregulation for cooperation between the public and private sector for a system designed to improve the disaster prevention capabilities of urban areas.

In addition, person trip survey and other data were utilized to estimate the flow of stranded commuters across a wide area and debate the accommodation of stranded commuters at urban transport facilities such as traffic node facilities and evaluate network routes.

(8) Snow Damage Measures

① Securing Winter Road Traffic (Snow and Winter Works)

In accordance with the “Act on Special Measures concerning Maintenance of Road Traffic in Specified Snow Coverage and Cold Districts,” to support safe and comfortable living, strengthen exchanges and cooperation between regions, projects for removing snow, preventing snow, snow damage, and frost damage on roads (snow and winter works) are being promoted. Also, when large vehicles are stalled due to unusual snowfall, to prevent an additional flow of traffic from causing severe traffic congestion; traffic will be closed at an early stage in coordination with prefectural police and carry out concentrated snow removal to ensure traffic is restored quickly. Furthermore, sharing and unifying the broadcasting of snow removal conditions and other information as well as improve the efficiency of snow removal, the establishment of information relaying headquarters by the relevant organizations of road administrators is being promoted.

② Avalanche Disaster Measures in Heavy Snowfall Regions

Across the nation there are about 21,000 avalanche risk areas and to protect human lives from avalanche disasters in settlements, the development of avalanche prevention facilities is being promoted.

③ Implementing Snow Clearing Waterways Projects

In heavy snowfall regions, in addition to securing flood control functions, water conveyance channels are being developed for rivers with abundant water volume to supply small and medium-sized rivers flowing through the city with water for snow clearing waterways.

(9) Sophistication of Disaster Prevention Information

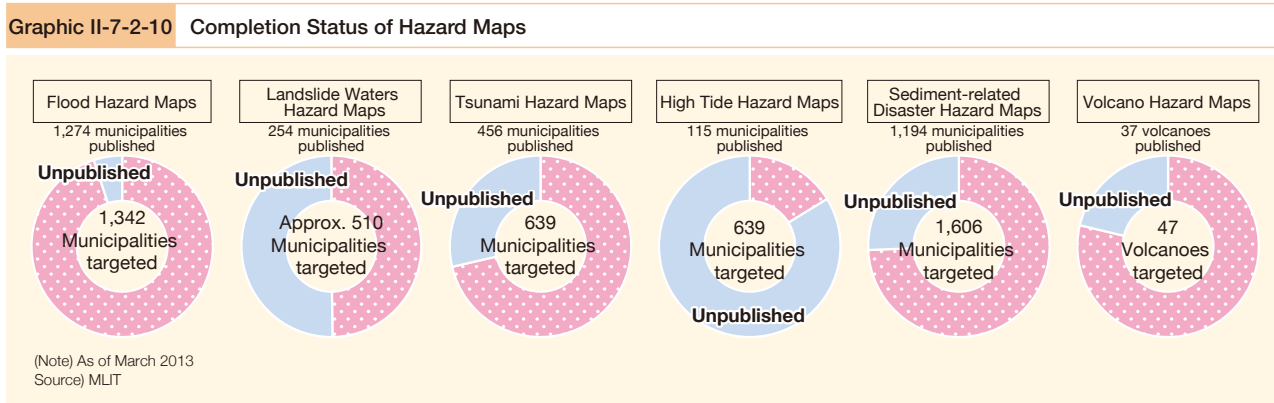
① Aggregation of Disaster Prevention Information

The “MLIT Disaster Prevent Information Center”^{Note} enables citizens to easily obtain and utilize disaster prevention information by aggregating and providing information available such as rainfall as well as provide a comprehensive array of information on disaster responses and disaster prevention.

Note <http://www.mlit.go.jp/saigai/bosaijoho/>

② Development of Hazard Maps

For residents to take appropriate evacuation actions when disasters occur, the creation and distribution of hazard maps by municipalities is being promoted to inform residents in advance of evacuation areas and evacuation paths in addition to creating an Internet portal site^{Note} where various hazard maps from all over the country can be searched and browsed.



③ Improvement of Disaster Prevention Weather Information

The Japan Meteorological Agency (JMA) issues warnings and advisories for each municipality as well as provides a distribution map, which is named “nowcast”, indicating up to an hour forecast for extreme meteorological phenomena affecting a small area such as tornadoes, thunders, and heavy rains. These warnings, advisories and nowcast are also available to mobile devices.

During the heavy rainfall in the Kii Peninsula caused by Typhoon Talas in 2011, JMA called strong caution to the exceptionally heavy rainfall with weather information following a heavy rain warning and a sediment disaster alert. However, the public and disaster prevention organizations did not recognize the situation as emergent. From this lesson, JMA improved the expressions of message described in weather information, e.g. “never experienced heavy rainfall”, in June 27, 2012 so that people can easily recognize the emergent situation.

Another improvement was achieved in the field of caution to storm. JMA started to describe the predicted maximum instantaneous wind speed in weather information message in addition to maximum (average) wind speed.

Column	Providing Information Bulletin on Record Precipitation
<p>1. Announcing Information Bulletin on Record Precipitation</p> <p>From July 11 to 14, 2012, the “Kyushu-hokubu heavy rainfall in July 2012” occurred which caused a major disaster in the northern region of Kyushu. During this event, the Japan Meteorological Agency issued the weather information with expression “never experienced heavy rainfall”. This message was heavily covered by media outlets along with images of flooding caused by the rainfall.</p> <p>2. How the Information Bulletin on Record Precipitation Came About</p> <p>During the heavy rainfall in the Kii Peninsula caused by Typhoon Talas in 2011, JMA called strong caution to the exceptionally heavy rainfall with weather information following a heavy rain warning and a sediment</p>	

Note <http://disapotal.gsi.go.jp/>

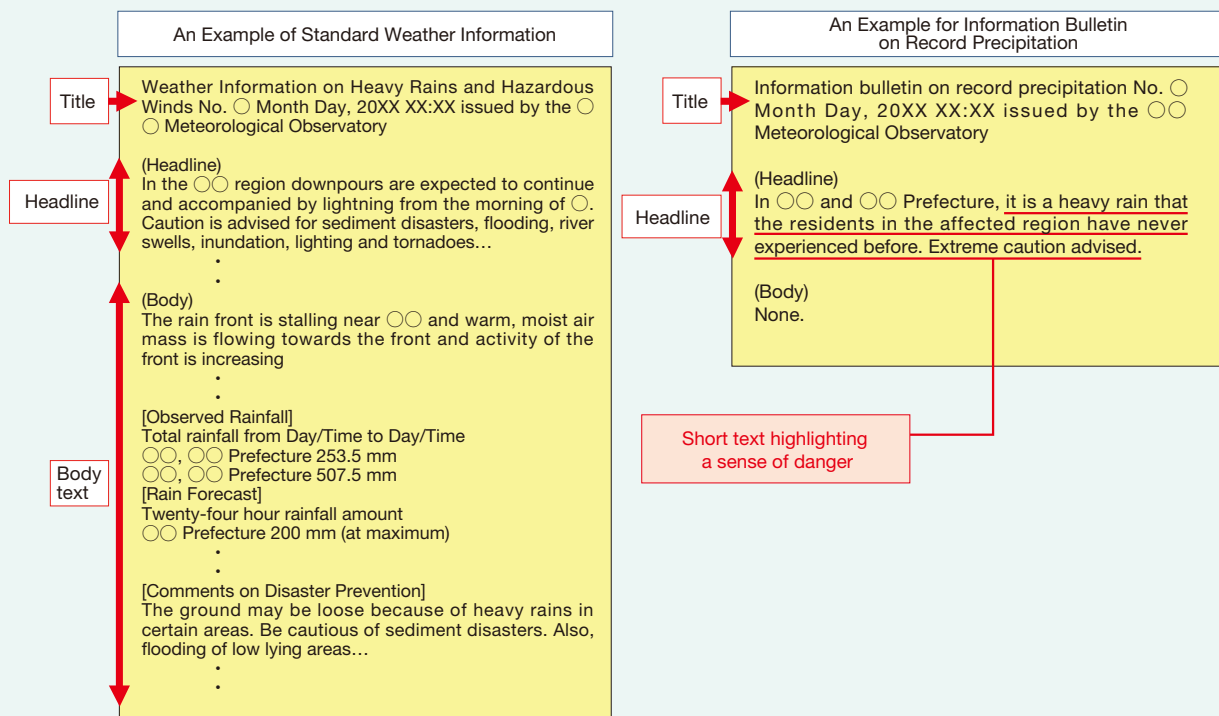
disaster alert. However, during follow up surveys conducted toward municipalities, it became apparent that the urgency felt by meteorological observatories was not adequately shared with disaster prevention organizations and residents.

As an immediate remedy to this issue, from June 27, 2012, announcement of “weather information on record downpours” began.

3. What is Information Bulletin on Record Precipitation?

Meteorological observatories issue weather information in order to supplement weather warnings and advisories or to call for preliminary caution from a day to several days prior to weather warnings and advisories. However, there is an opinion that under conditions when a major disaster is imminent, various and massive information comes to disaster prevention organizations and there are not enough resources to carefully assess the weather information. Therefore, under extremely urgent circumstances, quantitative values should be omitted as much as possible and JMA decided to include a very short text that effectively conveys a sense of danger. One example of such short texts is the “never experienced heavy rain.”

This short text is described in weather information when a very rare form of heavy rainfall that exceeds a return period of 50 years is observed, across a wide range of the country and the rainfall does not cease.



Source) MLIT

(10) Strengthening the Crisis Management System

In response to natural disasters, forecasting (Japan Meteorological Agency) natural phenomena that could lead to disaster, in addition to conducting inspections and emergency rehabilitation of facilities during disasters (departments in charge of facility management), and rescue operations at sea (Japan Coast Guard), there are many places with established initial response systems such as the emergency assembly of staff and the establishment of disaster measure headquarters but in light of the disaster response during the Great East Japan Earthquake, the crisis management system needs to be strengthened further. Additionally, using the equipment, manpower, expertise and other resources of MLIT and relevant organizations to support local governments stricken by disaster will be promoted more actively.

① Disaster Response by TEC-FORCE (Technical Emergency Control Force)

When large-scale natural disasters occur or are likely to occur, the TEC-FORCE (Technical Emergency Control Force) is available for deployment to smoothly and rapidly implement technical support for the local government of the affected area to carry out various emergency disaster measures such as rapidly assessing the extent of the disaster, prevent or contain damages, and rapid recovery of affected areas. In FY 2012, 717 members in total were deployed to Fukuoka Prefecture, Oita Prefecture, Kumamoto Prefecture and Kagoshima Prefecture in response to the damages caused by the heavy rainfall in Kyushu during June and July; 272 members in total were deployed for the heavy rainfall from August 13 (Uji/Otsu heavy rainfall) to carry out technical support for the swift restoration of affected areas and prevent repeated disasters.

② Improving Business Continuity Abilities

In light of the experiences gained from the Great East Japan Earthquake, the “MLIT Business Continuity Plan,” designed to promote efforts to ensure the continuity of priority operations in the event of a direct hit earthquake to the Tokyo metropolis or other disaster, will be reviewed and business continuity abilities will be improved through the implementation of training drills covering emergency assembly and disaster measure headquarters operation.

③ Deployment of Information Communication Systems and Equipment in Preparation for Disasters

To secure information communication systems in the event of a disaster, MLIT headquarters, local branch offices, and related organizations are connected with a highly reliable information communication network consisting of microwave networks and optical fibers, in addition to satellite communication channels to strengthen the system for gathering information from the disaster site, are used to create a high mobility system. Also, to rapidly respond to disasters, the deployment of disaster prevention helicopters, satellite communication vehicles, drainage pump vehicles, illumination vehicles, and other disaster response machinery is being expanded at regional development bureaus and local offices across the nation, so that in the event of a large-scale disaster, the framework will be able to execute rapid deployment.

④ Implementing Practical and Wide-Area Crisis Management Training

To improve the capacity of disaster response crew, practical crisis management training incorporating role-playing and other methods is being actively implemented in addition to calling on more participation from local residents, businesses, and NPOs as well as conducting evacuation drills using hazard maps for more practical and participatory flood prevention drills.

Additionally, the Great East Japan Earthquake reaffirmed the importance of coordination between relevant organizations during large-scale disasters, therefore efforts to improve and strengthen a wide-area disaster prevention framework in preparation of massive earthquakes and other large-scale disasters through the implementation of various joint exercises between multiple organizations centered around regional offices and bureaus including designated local government agencies, fire fighting organizations, and the Japan Self-Defense Force is being promoted.

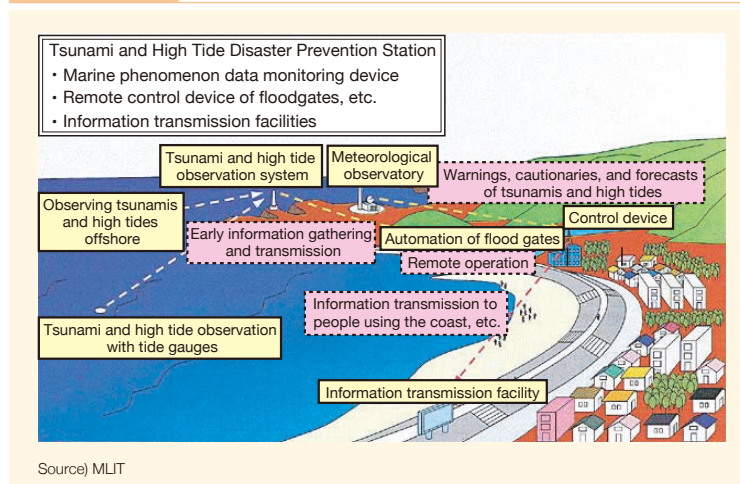
⑤ Preparing for Initial Response at Sea

The Japan Coast Guard deploys patrol vessels and aircraft around the clock to respond promptly to disasters. Also, in accordance with the scale of the disaster a countermeasure headquarters is established to implement damage assessment surveys and rescue operations through patrol vessels and aircraft for a prompt and appropriate response.

(11) Management of Existing Stock with ICT (Information and Communications Technology)

An optical fiber network is being used to enable the management of public facilities and sophistication of crisis management by taking advantage of ICT (Information and Communications Technology). Specifically, measures are being promoted for safe road use such as sophisticated management using optical

Graphic II-7-2-11 Illustration of a Tsunami and High Tide Disaster Prevention Station



fiber for continuous monitoring of the road slope and providing disaster information through the Internet. Also, in addition to remote control of floodgates and the remote monitoring of river flow conditions and volcanic regions, sewage treatment plants and pump stations are connected with optical fibers for remote monitoring and control as well to make management more sophisticated.

In addition, to speed up and consolidate the control of floodgates and other facilities, the development of tsunami and high tide disaster prevention centers to prevent tsunami and high tide damages is being supported through social infrastructure improvement general grants and other means.

(12) Disaster Recovery of Public Works Facilities

In 2012, damages to public facilities under the authority of MLIT (rivers, roads, coasts, sewerage, etc.) came to roughly 231.4 billion yen (13,837 cases) of reported damages due to many large-scale disasters such as frost heaves and the heavy rainfall in Northern Kyushu.

TEC-FORCE and others were deployed immediately after the disaster and swiftly carried out for restoration and reconstruction as well as provide technical advice to prevent secondary disasters.

Also, to enable rapid responses to major disasters such as the heavy rain in Northern Kyushu, the spending limit of the general unit price for disaster assessments were increased from the usual 10 million yen to 20 million yen, and the monetary limit that can be assessed in the office away from the field was raised from less than 3 million yen to less than 6 million yen to streamline assessment and greatly simplify and fast track the paperwork leading to project approval for the rapid restoration of affected areas.

Furthermore, the districts (84 cases) affected by natural disasters such as heavy rainfall due to the seasonal rain front including the Northern Kyushu heavy rains, waves from strong winds and heavy snowfall were granted emergency project promotion grants for disaster measures to ensure the safety and comfort of residents and urgently implemented measures to prevent a recurrence of disasters.

(13) Promoting Soft Measures Including Information and Public Relations for Safety and Comfort

To ensure safety and comfort, soft measures were promoted in addition to hard measures for natural disasters and the status of progress was subject to annual inspections in accordance with the “MLIT General Framework of Soft Measures Promotion for Safety and Comfort,” however, the Great East Japan Earthquake brought to light the need for congruent and integrated evaluations of hard and soft aspects and currently deliberations are in progress following the re-evaluation of the Social Capital Improvement Priority Plan/MLIT Disaster Prevention Operation Plan.

2 Secure Transportation Systems Resistant to Disasters

(1) Ensuring Redundancy and Substitutability

Rail, ports and other facilities are being made disaster resistant in addition to establishing an emergency transport framework for rescue and restoration activities ensures redundancy and substitutability in efforts to minimize the impact to domestic transport activities in the event of a disaster and secure the safety of users.

The road network's function is completely dependent upon being connected and unless replacement routes are secured during disasters, lessons learned from the heavy rain disaster and the Great East Japan Earthquake made it clear that it will be impossible to respond to the large-scale disasters expected in the future.

In order to build a disaster resistant wide area network, the development of arterial high-standard highways that connect major cities is being promoted to ensure replacement routes for sections at risk of causing disruptions to wide area transport when current routes are severed by earthquakes, tsunamis, heavy rains, and heavy snows expected in the future.

(2) Road Disaster Prevention Measures

To ensure a safe and highly reliable road network against disasters such as heavy rainfall, earthquakes, tsunamis, and heavy snowfall, disaster measures (measures for slopes, embankments, etc.), earthquake disaster measures (seismic reinforcement, etc.), and snow/cold region measures (development of anti-snow facilities) are being promoted as well as supplementing traffic facilities with disaster prevention functions (turning roadside stations, service areas, and parking areas into disaster prevention bases as well as developing emergency lines of communication and fire escapes).

Also, especially during large-scale disasters, each administrator broadcasts their own information making it confusing to users, so for the convenience of road users in the event of a disaster and ensure safe and smooth road traffic, a framework was developed so that information from road administrators and others are aggregated and then provided through the internet and other means so that the road disaster information is easy to understand for users.

Additionally, for regions that sustained devastating damages from the tsunami caused by the Great East Japan Earthquake, road development is being carried out as part of urban area development prioritized in the recovery plan and the development of access roads to expressway interchanges is being promoted. Also, as one measure to reduce tsunami damages, sea level indicator sheets are being added to road sign posts to promote the provision of sea level information to road users.

(3) Disaster Prevention Measures for Various Transportation Modes

For railways, subsidies are provided to partially cover the costs of improvement projects such as disaster prevention projects carried out by passenger rail companies including rockfall and avalanche measures as well as coastal protection and improvement projects carried out by Japan Railway Construction, Transport and Technology Agency (Incorporated Administrative Agency) to maintain the function of the Seikan Tunnel such as the improvement of substations and train control facilities.

For ports, the system for broadcasting and sharing disaster information gathered by the nation and port administrators is being strengthened to contribute to quick and accurate assessments of damages and emergency transport in the event of a disaster occurring.

For airports, we make the most important facilities earthquake-proofing, to ensure the essential functions of air-traffic control and basic facilities. “The most important facilities” includes the airport which considered to be important for the maintenance of aviation network, and continuity securement of the business activity. Also, it will be the important base for emergency transportation in the time of disaster. Also, in preparation for a large-scale tsunami disaster due to great earthquakes along the Nankai Trough, tsunami evacuation plans were created for major airports at risk of being affected by tsunami disasters to stipulate evacuation procedures for airport users in the event of a tsunami. Early restoration measures to quickly recover airport functions after a tsunami disaster will continue to be explored.

(4) Building a Logistics System Resistant to Disaster

The Great East Japan Earthquake highlighted the importance of utilizing the expertise and facilities of private sector logistics companies from the perspective of ensuring the smooth transport of relief supplies. In light of this lesson, the establishment of a logistics system that is resistant to disasters through the coordination of central government, local government, and logistics companies was evaluated and private logistics facilities that could be used as a base for supplies in the event of an earthquake were listed up (934 locations nationwide) and for applicable facilities, support was given to implement emergency power supply, communication, and other facilities to promote the establishment of a cooperative framework for coordination between the public and private sectors across the nation.

Section 3 Ensuring the Safety of Architecture

(1) Securing Trust for the Production and Supply System for Housing and Buildings

To ensure the complete legal compliance and appropriate architecting activities of registered architects so that citizens can obtain housing and use buildings with peace of mind, architectural structures beyond a certain scale that require sophisticated structural calculations are legally obligated to receive a structural calculation conformity assessment in accordance with the amended “Building Standards Act” in order to make architectural validation and inspections stricter.

After the amended “Building Standards Act” went into effect, the architectural confirmation process became backlogged, leading to a large decrease in the number of architectural confirmations; therefore, in light of this, the operation of architectural confirmation procedures was improved on two occasions including speeding up the architectural confirmation review and simplifying the application documentation.

Also, regarding the future of the architectural standards system, the Council for Social Infrastructure was consulted in August 2012 and deliberations are under way by the Architectural Standards Group established in September 2012 under the Council’s Architecture Subcommittee. Of this, regarding the scheme for promoting the seismic resistance of housing and buildings, the first findings were compiled in February 2013 and based on this the “Bill for Partial Amendments to the Act for Promotion of Renovation for Earthquake-Resistant Structures of Buildings” was submitted to the 183rd ordinary Diet session.

For measures concerning architects, in accordance with the amended “Act on Architects and Building Engineers,” initiatives are being taken toward the course material and encouraging completion for the periodic training made mandatory for registered architects.

Furthermore, in order to ensure defect guarantee liability, “The Act for Execution of Defect Warranty Liability under HQAA” was executed in October 2009. This Act obligates new housing builders and realtors to deposit foundations or complete defect warranty insurance. In order to operate this Act smoothly, MLIT is developing a reception system for insurance corporations, and is carrying out seminars and distributing pamphlets for builders, realtors and consumers to popularize this Act in all prefectures.

(2) Ensuring the Safety of Elevators and Amusement Machines

In response to the elevator fatality accident that occurred in October 2012 in Kanazawa City, Ishikawa Prefecture, the Elevator Accident Investigation Group of the Council for Social Infrastructure conducted a study to shed light on the cause of the accident and in February 2013, put together the “Ishikawa Prefecture Open Door Running Accident Investigation Interim Report” to shed light on elevator and amusement machine accidents and deliberate measures to prevent reoccurrences. Additionally, local government and regional development bureau officials were given training to conduct accident investigations of elevators and amusement machines for the development of staff.

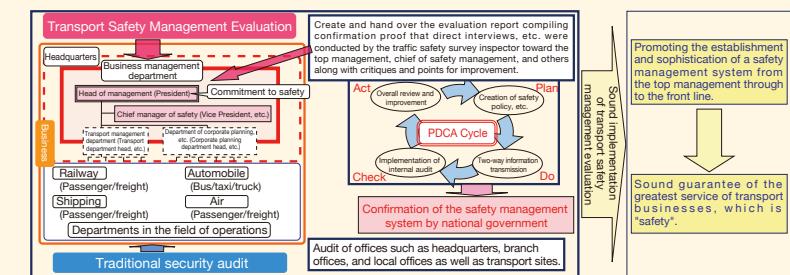
Section 4 Strengthening Safety Measures in the Transport Sector

Ensuring safety is a central and fundamental issue in the transport sector and once an accident occurs not only can it cause significant damages but also has an enormous impact on society so various measures are being undertaken to prevent accidents from occurring.

1 Establishing and Improving the Safety Management System of Public Transportation

The “Transport Safety Management System,” instituted when public transportation accidents and troubles due to human errors began to occur frequently, makes it mandatory for the transportation organization to create and submit a “safety management policy” as well as elect and register the “general safety manager” in addition to top management taking an active leadership role to guide the frontline to work

Graphic II-7-4-1 Illustration of Implementing a Transport Safety Management Evaluation



Source) MLIT

together in establishing and strengthening the safety management system and these efforts will be assessed by national government so that the safety management system can be continuously improved under a PDCA (Plan, Do, Check, Act) cycle.

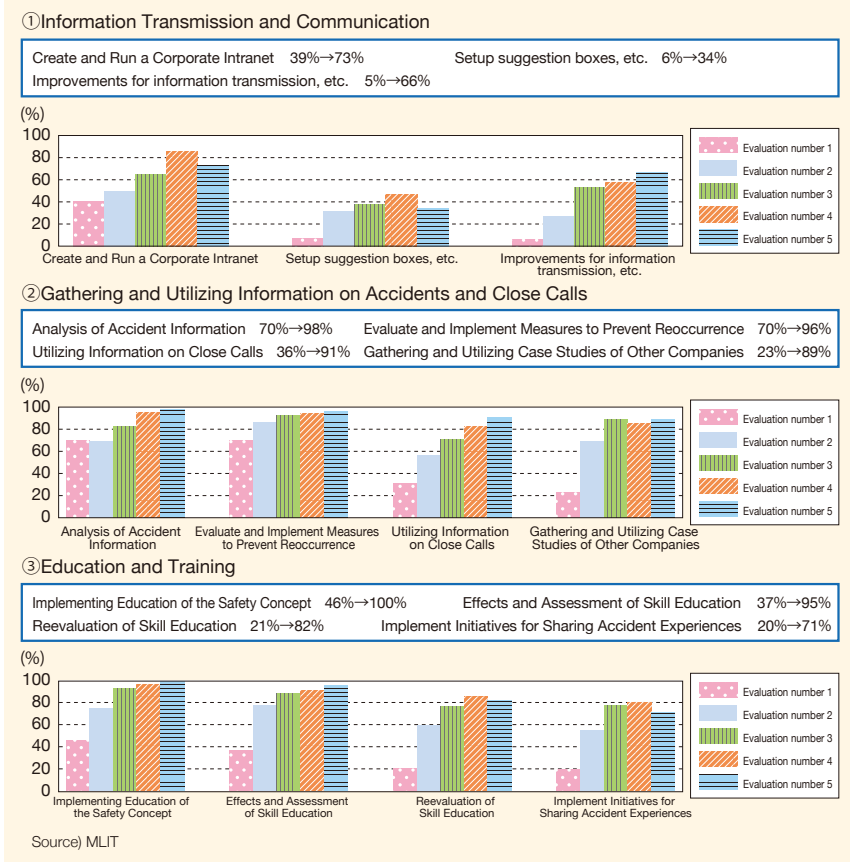
From October 2011 to the end of September 2012, transportation safety management evaluations were conducted for a total of 915 companies (114 rail companies, 87 car companies, 697 shipping companies, and 17 airlines). According to the evaluation results so far, since introducing the new system, the transportation safety management initiatives taken by businesses show a trend of improvement; better information transmission and communication within the company, promoting and utilizing the collection of information on close calls, and improved education and training especially show marked improvement and the effects of this system are becoming apparent.

In addition, the “Policy Vision for Transport Security” compiled in December 2011 following deliberations by the Transport Security Group of the Transport Council, outlines the direction of future security policy along three points; ① For small and medium-sized businesses, the need for raising awareness and dissemination is still high and in addition to the usual implementation of safety management evaluations conducted by a third party certification body, coordination with private sector risk management businesses such as insurance companies needs to be promoted from the raising awareness and dissemination stage; ② For large and medium-sized businesses, the effectiveness and efficacy of the businesses’ initiatives with regard to the transport safety management evaluations will be the focal point and for businesses to ensure the effectiveness of safety management;

③ strengthen the training of officials

for human resources to conduct management evaluations. In response to this, to ensure the effectiveness of public transportation safety regulations, an evaluation system based on data gathering and analysis of accidents and incidents will be established, the transport safety management system will be improved, and raising awareness and dissemination toward small and medium-sized businesses will be promoted as the national government and businesses each take an active role in strengthening their initiatives.

Graphic II-7-4-2 Effects of Implementing a Transport Safety Management System Among Large Businesses (October 2006 to September 2012)



2 Railway Transportation Safety Measures

Incidents of operating accidents in railway traffic show a long-term trend of decline^{Note} and has leveled off in recent years due to the promotion of level crossing accident prevention measures as well as the development and improvement of safety devices such as Automatic Train Stop (ATS) devices.

Note For years such as the FY of 2005 when the JR West Fukuchiyama Line derailling accident occurred, where an operation accident caused great human losses, the number of casualties is high.

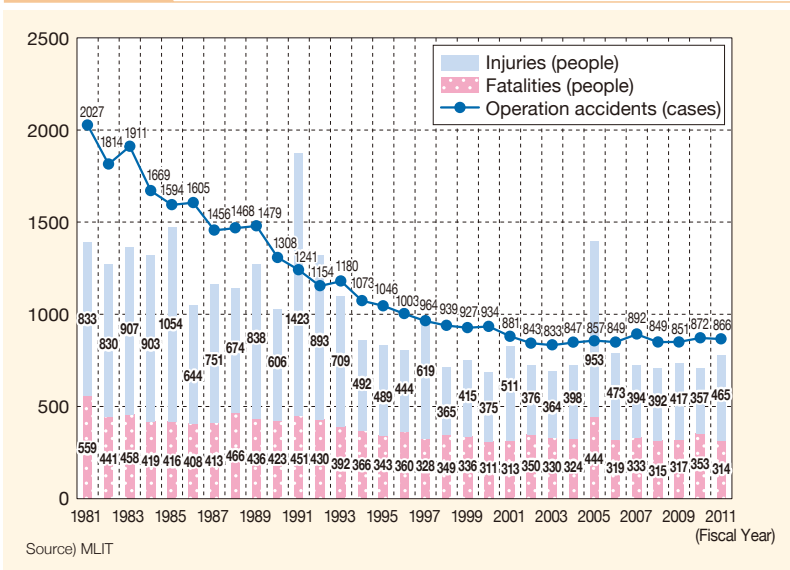
(1) Improving Railway Safety

The JR West Fukuchiyama Line derailling accident served as a catalyst for the revision of the “Ministerial Ordinance to Provide the Technical Standard on Railway” to make the installation of Automatic Train Stop (ATS) devices with functions to limit speed on curbs, driver anomaly detection and train stopping devices, and driving condition recording devices mandatory.

Additionally, the “Railway Strong Wind Measures Committee” was established following the JR East Uetsu Line train derailment to deliberate on appropriate meteorological observation, driving regulations, and wind proofing measures for railways as part of both soft and hard measures for strong winds as well as increasing the installation of wind gauges to strengthen the framework for observing strong winds on railways.

In addition to these, safety audits are implemented on railway operators to ensure that appropriate measures are taken to ensure the safety of transport, the management and maintenance of facilities and fleet, and the handling of operation to prevent accidents.

Graphic II-7-4-3 Railway Traffic Operating Accidents and Casualty Trends



(2) Promotion of Railway Crossing Measures

“Gridlocked rail crossings,”^{Note} mainly seen in urban areas, cause crossing accidents and chronic traffic congestion requiring immediate measures. For this reason, in accordance with the “Act on Promotion of Railway Crossings” and the “Ninth Fundamental Traffic Safety Program,” the development of grade crossings, structural improvements, and pedestrian bridges as well as improvements of crossing safety facilities for crossing gates are being used to prevent crossing accidents.

FY 2012, three crossing locations were designated as requiring the installation of safety facilities in accordance with the “Act on Promotion of Railway Crossings.”

(3) Promoting the Development of Platform Doors

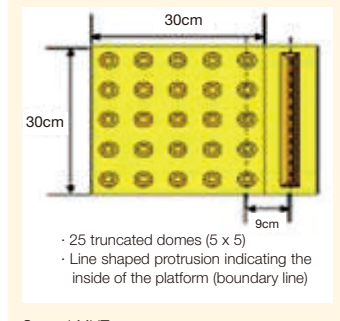
To improve the safety of the visually impaired and other rail station users, the installation of platform doors to prevent falling from the platform is being promoted (installed at 564 stations as of the end of FY 2012). Based on the “Basic Policy to Promote Smoothness of Transport etc.” (March 2011) and the “Priority Plan for Social Infrastructure Development” (August 2012), hard measures such as the promoting the development of platform doors and tactile pavings with boundary lines as

Platform Door



Source) MLIT

Tactile Paving with Boundary Lines



Source) MLIT

Note Railway crossings that are closed for more than 40 minutes/hour during hours when the train frequency is high.

well as technology development for platform doors with better carriage door alignment and soft measures are being promoted such as “friendly manners campaign” calling on rail users to offer assistance to those such as the visually impaired.

3 Safety Measures for Maritime Traffic

When observing the past five years, the number of dead and missing persons due to marine casualties shows a downward trend but the number of ships (the number of marine casualty ships) that were involved in marine casualties is virtually unchanged, requiring the promotion of further safety measures.

Friendly Manners Campaign



Source) MLIT

(1) Improving Ship Safety and Ensuring Ship Navigation Safety

① Improving Ship Safety

Regarding ship safety, the International Maritime Organization (IMO) is central in stipulating international standards and in addition to actively participating in IMO discussions, in July 2012, the installation of Electronic Chart Display and Information System was made mandatory in accordance with the amendment of the SOLAS Convention^{Note 1} and domestic laws were also revised. Also, to eliminate substandard ships,^{Note 2} Port State Control (PSC)^{Note 3} is also being implemented.

② Ensuring Ship Navigation Safety

In accordance with the “Act on Ships’ Officers and Boats’ Operators” which complies with the STCW Convention,^{Note 4} the qualifications for ship personnel are defined to ensure ship navigation safety from human factors. In June 2010, the revised STCW Convention (Manila Amendments) with amendments stipulating additional competencies that ship personnel must possess and by 2017 the amendment will be in full effect. Also, for the maritime pilot system, the qualifications for becoming a maritime pilot are defined to ensure the safety of ship navigation and from 2007 a graded licensing system was adopted and from the point of securing a stable supply of human resources and a training program was created to secure and educate successors.

Investigation and inquiry, in accordance with the “Act on Marine Accident Inquiry,” are conducted for a marine technician, a small craft operator, or a pilot who causes a marine accident intentionally or negligently in the course of duties and in 2012 there were 316 cases of determinations and a total of 411 marine technicians, small craft operators, or pilots were performed disciplinary actions of suspension of business operation (one to four months) or admonition to prevent the occurrence of marine accidents.

To comply with the expanded and more sophisticated duties required of VTS (Vessel Traffic Services) Operators at VTS Centers in accordance with the “Partial Revision of the Act on Port Regulations and the Act on Maritime Traffic Safety” (July 2010), the VTS supervisor directs and manages the VTS operators and ensure that appropriate information is provided by the center.

For the development of Aids to Navigation (AtoN), to respond to faster ships and other changes in the maritime traffic environment and ensure the safety of ship navigation, there is a need to improve and strengthen information service systems by utilizing the latest in information technology, therefore AtoNs in 264 locations were improved or repaired and of the 158 AtoNs that were affected by the Great East Japan Earthquake, the 47 AtoNs that were restored with stopgap measures and the three AtoNs still awaiting restoration (end of March 2013), these will be restored along with the restoration of ports and breakwaters. Also, evacuation ports are being developed at five ports including Shimoda Port.

Also, electronic nautical charts are being further improved taking it to account that certain types of vessels are being obliged to deploy the Electronic Chart Display and Information System (ECDIS) on board. And nautical charts described only by English are published to prevent marine accidents by the ships operated by foreign crew. Revision of nautical charts in the major 15 ports affected by the Great East Japan Earthquake is still in progress. In addition, the effectiveness

Note 1 International Convention for the Safety of Life at Sea, 1974.

Note 2 Ships not compliant with the standards of international conventions.

Note 3 The oversight of foreign ships by the port of call.

Note 4 An international convention adopted in 1978 for the training and certification of mariners. The international convention stipulates the training and certification of mariners for the purpose of improving the safety of human lives and assets at sea and also promote the protection of the marine environment.

of Class-B AIS and other simplified electronic sea navigation devices is currently being evaluated. The “Marine Accident Analysis Center” established under the National Maritime Research Institute (Incorporated Administrative Agency) conducts highly specialized analysis of accidents as well as rapid analysis and sharing of information when major marine accidents occur.

For the Straits of Malacca and Singapore which are very important sea lanes where 80% of imported crude oil transits through, Government of Japan is cooperating with projects that request support from the littoral States of the straits under the “Cooperative Mechanism”^{Note 1} and additionally, Japanese maritime industries and the Nippon Foundation (Public Interest Incorporated Foundation) are contributing to the Aids to Navigation Fund.^{Note 2} At the 5th Co-operation Forum under this mechanism, Japan explained the importance of the straits and Japan’s contributions, appealing the importance for a wide range of countries using the straits to contribute to the fund in order for the fund to continue stable development. As the major national user state of these straits, equipped with the knowledge obtained from being the sole cooperating country from before the mechanism was established and friendly relations with the littoral States, Japan will continue to actively cooperate for safety measures of the straits through public and private sector coordination.

(2) Promoting Safety Measures for Crewmen / Passengers on Boats

Around 40% of the fatalities and missing persons from accidents involving crewmen / passengers on boats are due to falling into sea. In order to survive a fall, it is essential that they are floating at sea and a request for rescue is made immediately. For this reason the Japan Coast Guard is spreading the message and raising awareness for wearing life jackets at all times, securing appropriate communication measures such as having cell phones in waterproof packs, and effectively using the emergency telephone hotline to the Japan Coast Guard, “118” as the three basic self-rescue measures. Also, for small crafts (fishing boats, pleasure boats, etc.), the fatality rate of those that do not wear life jackets that fall into the sea is four times higher than those that wear life jackets; wearing a life jacket is a major factor in surviving a fall into sea. For this reason, in addition to support for LGL^{Note 3} and designating model marinas for promoting life jacket wearing,^{Note 4} wearing a life jacket is promoted year round through coordination with relevant ministries and local government.

(3) Strengthening the Rescue System

In order for the Japan Coast Guard to carry out swift and appropriate rescue, distress frequencies are monitored around the clock and “118” as the telephone number for emergency calls is made available to quickly catch accident occurrence information. Also, in addition to improving the rescue technology and abilities of those such as the special rescue team and divers, increasing the number of mobile rescue technicians that can execute rescue maneuvers such as descents and air lifts from helicopters, have diving ability, and able to carry out first aid treatment deployed to air bases, improving and strengthening the medical control system to guarantee the quality of emergency aid procedures carried out by paramedics, and improving the technology of patrol vessels and aircraft to improve and strengthen rescue and emergency systems.

Note 1 The first time the spirit of Article 43 of the United Nations Convention on the Law of the Sea was for cooperation between littoral States and national beneficiaries of international straits was embodied in the world, and consists of the three elements of Co-operation Forum, Project Co-ordination Committee, and the Aids to Navigation Fund.

Note 2 A fund established to cover the costs of replacement and repair of lighthouses and other navigational aid facilities used by the Straits of Malacca and Singapore.

Note 3 Local activities to promote the wearing of life jackets by the family of fishermen and others. Stands for Life Guard Ladies (female wearing promotion staff).

Note 4 Marinas and fisheries cooperative associations that are actively taking the initiative to promote the wearing of life jackets at all times. Designated as centers for raising safety awareness and promoting life jacket wearing in the region.

4 Air Traffic Safety Measures

(1) Strengthening Aviation Safety Measures

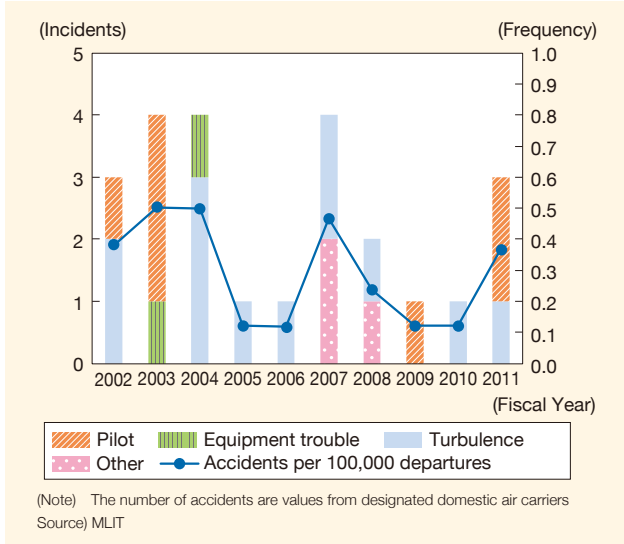
① State Safety Program (SSP)

To prevent aviation accidents and incidents concerning safety from happening, the nation will continue to monitor and evaluate the degree of achieving safety for safety management and initiatives carried out by airlines and airport administrators and are currently evaluating the implementation of a State Safety Program (SSP) as a framework to provide oversight of safety.

② Air Transport Safety Measures

For specified Japanese air carriers,^{Note} a passenger fatality accident has not occurred since 1986 but to respond to safety troubles appropriately, in addition to strengthening the safety management system of air carriers, appropriate monitoring and supervision toward air carriers such as safety audits will be implemented as needed for the promotion of preventative safety measures. Also, in light of the increased traffic from foreign airlines due to the promotion of open sky policies, monitoring will be strengthened with on-site inspections of foreign aircraft entering our country and for the domestically produced passenger aircraft project as the government of the manufacturing nation appropriate and speedy reviews will be implemented.

Graphic II-7-4-4 Incidence and Frequency of Accidents on Domestic Airlines



(2) Creating an Aviation Security System for Safe Air Traffic

Since the majority of serious incidents concerning air safety operations originate from human error, preventing miscommunication between controllers and pilots and providing controllers and pilots' visual display and transmission systems among other human error measures are being promoted.

Also, since the demand for small aircraft such as helicopters is increasing for disaster response and transport of emergency cases, low altitude flight paths as well as setting departure, arrival, and approach procedures that take into consideration the flight characteristics is being evaluated.

Note Domestic air carriers that operate air transport businesses that use aircraft with 100 or more passenger seats or with a maximum takeoff weight of more than 50,000 kilograms.

5 Determining the Causes of Air, Rail, and Marine Accidents and Preventing Recurrence

The Japan Transport Safety Board published a “Ship Accident Occurrence Hazard Map” for the purpose of ① facilitating the search of reports and promote utilization, ② making it easy to confirm risks for the scheduled route and operating locations, and ③ providing points of caution during maneuvering and operation.

For accident investigations, 22 aviation accident investigation reports were published and regarding the

accident that occurred in January 2011 in Kumamoto Prefecture where a rising aircraft is presumed to have crashed into the hillside, the Minister of Land, Infrastructure and Transport was counseled that to prevent air flight accidents during Visual Flight Rules,^{Note} pilot organizations and individual pilots need to be informed to always depart in situations where based on the latest meteorological information that visual meteorological condition can be sustained for the entire path; for aviation accidents one case was given counsel, one case was given counsel on safety, and three opinions were presented.

Additionally, 13 railway accident investigation reports were published and of this the major incident where the signal did not display a stop signal on multiple occasions which occurred in Hokkaido in June 2011, the parties relevant to the cause were given continued education and training to take appropriate measures when errors occur and in addition to evaluating safety measures, the implementation of necessary measures was counseled.

Also, 1,136 ship accident investigation reports were published and of this regarding the tugboat capsizing accident which occurred in Ishikawa Prefecture in September 2011, the head of the relevant government agency was counseled to establish a comprehensive management framework for safety and the parties relevant to the cause were counseled on measures to ensure safety for the tugboat’s towing and also made to submit a report on the matter; for ship accidents six cases were given counsel, two cases were given counsel on safety, and four opinions were presented.

6 Support for Victims and Families of Public Transport Accidents

In order to ensure the support of victims of public transport accidents, the Public Transport Accident Victims Support Office was established in April 2012. The Support Office serves to ① act as a clearinghouse of information when public transport accidents occur and ② provide mid to long-term coordination functions so that victims can return to normal life after accidents occur; in FY 2012, the victims of the Kan-Etsu Expressway tour bus accident were given support.

Ship Accident Occurrence Hazard Map



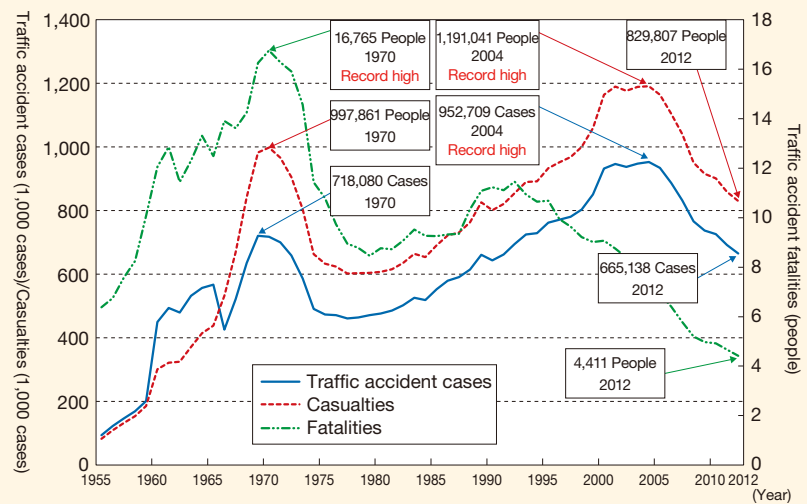
Note A type of flight system for aircraft. Under meteorological conditions where sufficient visibility is always ensured, the pilot will only be subject to traffic control near the airport or its surroundings but given the freedom to fly at their discretion otherwise. This is referred to as visual flight rules or VFR for short. Under this system flying only requires the submission of a flight plan to the nearest airport office and as long as the altitude prescribed by VFR is maintained the course can be freely changed.

In addition to implementing education and training for the staff giving support, creating an operation manual, network building with other relevant organizations, and drafting the public transportation operator victim support plan creation guideline, the functions of the Support Office will be improved with the advice of stakeholders and steadfastly further initiatives to support the victims of public transport accidents.

7 Safety Measures for Road Traffic

The number of traffic accident fatalities in 2012 was 4,411 people (a 5.4% decline from the previous year) after 12 years of continuous decline. However, roughly half of the traffic accident fatalities are the elderly who are 65 years old or older and the situation is still severe with 830,000 people killed or injured by traffic accidents. For this reason, efforts will be made to further reduce traffic accidents and various measures will be implemented in coordination with the National Police Agency and others.

Graphic II-7-4-5 Traffic Accident Cases and Casualty Trends



(Note) 1 Up until 1959, minor damage accidents (injuries lasting less than 8 days or less than 20,000 yen in property damage) are not included.
 2 After 1966 property damage accidents are not included.
 3 The cases prior to 1971 do not include fatalities and casualties of Okinawa Prefecture.
 Source) Developed by the MLIT from: National Police Agency documents

(1) Promoting Efficient and Effective Traffic Accident Measures

In light of the advances in road development and changes in the social landscape of recent years, a road environment where pedestrians, bicycles, and a diverse array of users can safely and comfortably coexist is needed. For arterial roads that account for roughly 70% of traffic accident fatalities, effective and efficient accident measures are being promoted through public participation and collaboration under the “Traffic Accident ZERO Plan (strategy for concentrated relief of accident prone sections)” to implement concentrated measures for areas with a high degree of danger for accidents.

In addition, for community roads where the proportion of accident casualties involving pedestrians and bicycles is high, for the purpose of ensuring safe pedestrian spaces, wide-ranging and integrated traffic accident suppression measures are being promoted such as broad speed regulations combined with narrowing the road, widening the road shoulder, developing the sidewalk, suppressing vehicle speeds, and suppressing through traffic.

(2) Safety Driving Support on Expressways Using the ITS Spot Service

The ITS Spot Service available on all domestic expressways since August 2011 promotes the support of safe driving by calling attention to accident prone areas or falling objects as well as forewarning of snow and overtopping wave conditions.

(3) Systematic Road Facilities Management to Provide Safe and Comfortable Road Services

On December 2, 2012, nine precious lives were lost when the Chuo Expressway Sasebo Tunnel ceiling panel collapse accident occurred. In response to this accident, the “Research and Investigation Committee on the Tunnel Ceiling Collapse Accident” was held to investigate the cause of the accident and evaluate measures to prevent a reoccurrence from a specialist perspective.

Also, in the future, it is feared that the danger of serious damages occurring may increase on aging road stock such as

many of the bridges and other structures built in a short period of time during rapid economic growth. Due to these circumstances, to enable the sustainable and strategic maintenance, management, and renewal of road stock, for road bridges, etc. from expressways to municipal roads, the inspection, diagnosis, and maintenance repair of road stock in accordance with lifecycle extending repair plans is being implemented and preventative maintenance is being furthered in a planned manner. Also, regarding the bridges of local governments, roughly 10% of municipalities are unable to conduct regular inspections due to lacking personnel, technology, or funding, therefore, clarification of inspection responsibilities and technical standards in addition to technical and financial support measures are being implemented.

(4) Strengthening Safety Measures in Response to the Expressway Tour Bus Accident

In response to the Kan-Etsu Expressway tour bus accident which occurred in April 2012, emergency measures such as an emergency priority audit and prevention of fatigued driving were implemented and tour companies providing expressway tour bus services were required to obtain permission for operating share-ride busses and forced to transition to a new expressway share-ride bus format with responsibility for ensuring safety under the Road Transportation Act.

(5) Comprehensive Safety Measures for Automobiles

① Safety Measures for Commercial Motor Vehicles

Under the “Commercial Motor Vehicles Comprehensive Safety Plan 2009” which aims to reduce accident fatalities and personal injury accidents by half and completely eliminate driving under the influence in the ten years from 2008 to 2018, more safety measures are being implemented such as expanding the scope of mandatory installment of tachographs in trucks.

② Considering Vehicle Safety Measures for the Future

The Ninth Fundamental Traffic Safety Program (created March, 2011) established a goal of reducing traffic accident fatalities to fewer than 3,000 by 2015. In order to attain this goal of reducing traffic accidents, the three measures of “expanding and strengthening safety standards,” “Advanced Safety Vehicle (ASV) promotion plan,” and “automobile assessment” will be linked synergistically for initiatives to promote vehicular safety measures.

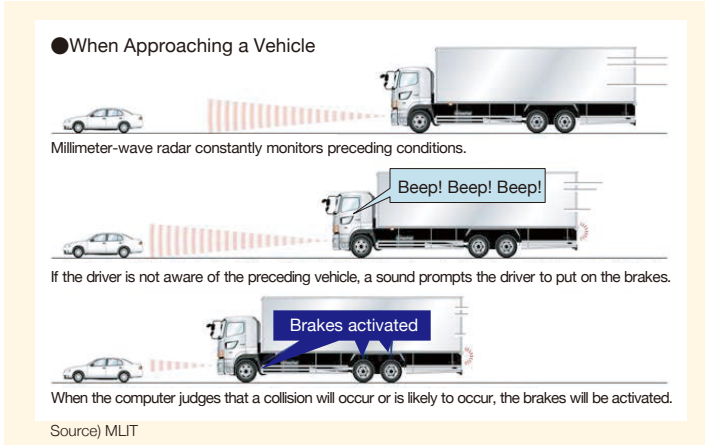
③ Expanding and Strengthening Safety Standards

For large freight vehicles and busses, any accident tends to cause great damages so the standardization and mandatory equipment of collision damage reduction brakes and standards for large freight vehicles was established in March 2012 and for busses in January 2013. Also, a certification system was created in January 2013 for a “new category” of vehicle, the ultra compact mobility for around two passengers and smaller than light motor vehicles so that they can run on public roads.

④ Development, Commercialization, and Promotion of Advanced Safety Vehicle (ASV)

The development, commercialization, and promotion of Advanced Safety Vehicle (ASV) is being promoted under the cooperation of industry, academia and government and ASV technology that is already commercialized such as collision damage reduction brakes are being widely promoted and efforts are under way for the commercialization of safe driving support systems that use communication such as vehicle-to-vehicle communication systems and pedestrian-to-vehicle communication systems.

Graphic II-7-4-6 Illustration of Collision Avoidance Brake Activation



⑤ Providing Safety Information Through Automobile Assessment

In order to promote the selection of safe automobiles and child seats by users and the development of safer automobiles, the evaluation results of the safety of cars is published. In FY 2012, 12 automobiles types and 9 child seat types were newly evaluated.

⑥ Improving and Strengthening the Recall System

For the swift and steady implementation of automobile recalls, efforts are made to gather information from automobile manufacturers and users and during the audit of recall operations by automobile manufacturers confirmation and guidance is carried out and for automobiles with concerns for safety and environmental performance, the National Traffic Safety and Environment Laboratory (Incorporated Administrative Agency) will conduct technical verifications using the current model. Also, to strengthen the gathering of defect information from users, public awareness campaigns for the “automobile defect information hotline” (www.mlit.go.jp/RJ/) were actively carried out.

To make the automobile recall system more user-friendly, the information gathering system and research analysis system were strengthened.

In addition, the information collected by MLIT including malfunctions, accidents, and fires are made public and information is provided to users regarding matters that require the attention of users or details necessary for the appropriate usage or maintenance and management or to take appropriate measures when malfunctions occur. Especially, regarding “don’t forget to adjust the shoulder belt of the child seat!” and “be careful so that children do not jam their fingers in moving parts such as the passenger car’s arm rest,” these were widely disseminated to users to exercise caution through press releases.

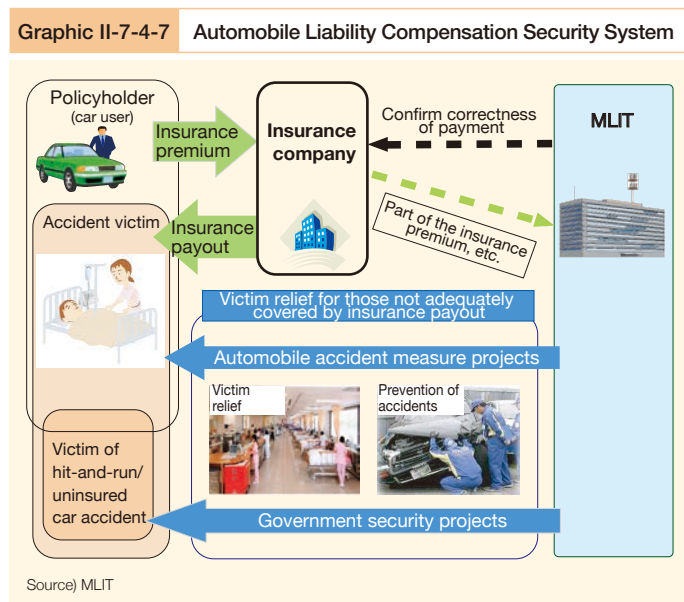
Also, in FY 2012 the number of recalls submitted was 308 and the number of cars affected was 5,612,979.

⑦ Sophistication of Vehicle Inspections

In order to prevent illegal secondary modifications^{Note} and the early detection of vehicular malfunctions, information technology is being utilized to make vehicle inspections more sophisticated.

(6) Protecting Victims with the Automobile Liability Security System

The automobile liability security system, implements various victim relief measure services such as insurance payments of mandatory vehicle liability insurance, relief (governmental indemnity services) for victims of hit-and-run and uninsured car accidents, and payments for caretaker fees and establishment of care facilities for those with heavy residual disabilities based on the principle of the mutual support of the car society and is fulfilling a big role in protecting victims of traffic accidents.



Note Obtaining a new inspection with various parts removed and then reinstalling the parts in question after the inspection for usage.

Section 5 Crisis Management and Security Measures

1 Promoting Crime and Terrorism Countermeasures

(1) Coordinating with Other Countries for Crime and Terrorism Countermeasures

① International Initiatives for Security

Meetings and projects in the field of transport security at international organizations such as Group of Eight (G8), International Maritime Organization (IMO), International Civil Aviation Organization (ICAO), and Asia-Pacific Economic Cooperation (APEC) are participated in and in addition to applying it to domestic security measures, initiatives for international cooperation and harmony is being promoted.

The “International Working Group on Land Transport Security (IWGLTS)” established in 2006 is currently participated in by over 16 nations and is expected to further develop as a framework for land transport security and bilateral conferences with the United States of America and European Union are also utilized to improve domestic security and international contributions.

② Anti-Piracy Countermeasures

The number of piracy incidents in 2012 off the coast of Somalia/Gulf of Aden, a globally strategic sea lane, was 75 and while measures by major maritime nations such as putting armed private security guards on board their ships lead to a decline compared to the previous year it is still a matter of grave concern.

Under these conditions, our country looks to the United Nations Convention on the Law of the Sea and in accordance with the “Law on Punishment of and Measures against Acts of Piracy (the Anti-Piracy Measures Law),” piracy activity is seen as a criminal activity against our nation and the scope of protection is extended beyond Japanese ships to include ships of other countries and Maritime Self Defense Forces escort vessels provide escort to ships passing through the Gulf of Aden and two P-3C patrol aircraft conduct monitoring activities.

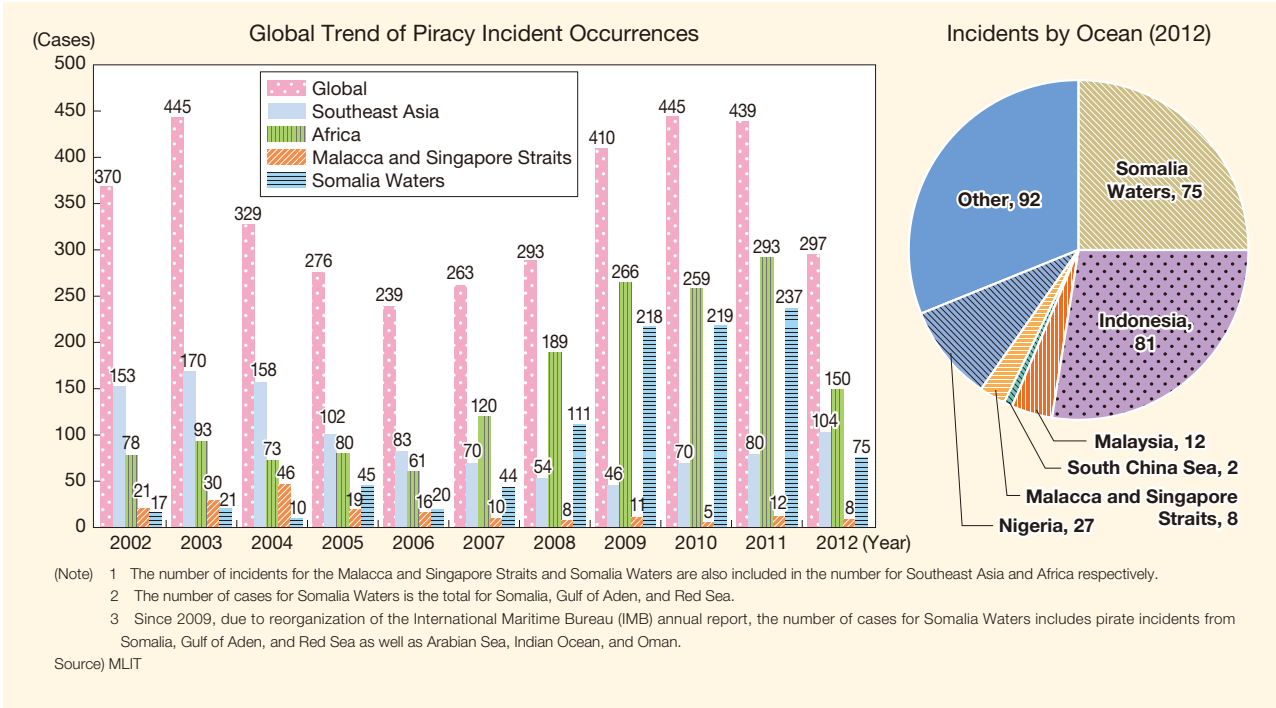
The Japan Coast Guard posts the eight officers to the Maritime Self Defense Forces escort vessel deployed off the coast of Somalia in accordance with the piracy countermeasure orders to conduct judicial police activities and the Japan International Cooperation Agency (JICA, Incorporated Administrative Agency) invites members of the coast guards of neighboring countries to Somalia waters such as Yemen for maritime law enforcement course to support the improvement of the coast guard capabilities of neighboring coastal states.

Graphic II-7-5-1 Condition of Piracy Incidents and Other Damages to Japanese Related Ships (2012)



Source) MLIT

Graphic II-7-5-2 Global Piracy Incidents and Trends by Ocean (2012)



In addition to the piracy countermeasures in Southeast Asia waters and conducting joint exercises and training through the deployment of the Japan Coast Guard vessels, the JICA framework is used to dispatch experts and invite trainees to Japan for the human resources development and technical transfer to the coast guard organizations of relevant coastal nations in order to support their capacity building. Though the number of piracy and robbery cases recently reduced in comparison to the peak in 2000 in the Southeast Asia Waters, it has not been eliminated. It's necessary to continue these piracy countermeasures in the area.

③ Security Measures for Ports

Human resource development for port security measures is being implemented for ASEAN countries through training, expert conferences, and other measures. Also, information is being shared with other countries as part of the initiative to further raise the level of security in international ports.

(2) Comprehensive and Strengthened Counter-Terrorism Measures for Public Transport

In recent years, a variety of major incidents are occurring around the world such as the September 11 terrorist attacks in the United States of America (September 2001), the London Bombings (July 2005), and the Mumbai attacks (November 2008). Under these conditions, in addition to responding swiftly to major incidents, counter-terrorism measures are comprehensively directed and inspections during rush periods even during ordinary times as part of counter-terrorism measures taken in a variety of fields.

① Promoting Counter-Terrorism Measures for Railways

In addition to increasing security cameras within stations and strengthening patrols, “crisis management levels” are set and operated as well as “displaying security and user participation”^{Note} as the axis of promoting counter-terrorism measures. Also, the sharing of information regarding railway counter-terrorism measures with major nations is being actively pursued.

Graphic II-7-5-3 Implementing “Displaying Security and User Participation” as the Axis of Railway Counter-Terrorism Measures



(Picture 1) “Crisis management poster” displayed inside the station



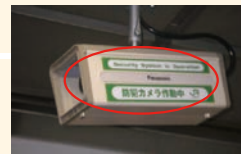
(Picture 2) “Anti-terrorism cooperators emblem” on sales staff, etc.



(Picture 3) Displaying request for cooperation relating to any suspicious objects, etc. discovered on the platform ticker



(Picture 4) Patrols by security guards and staff



(Picture 5) Prominently display warnings such as “surveillance cameras in operation”



(Picture 6) Utilization of train intercom for the discovery of suspicious objects, etc. (State “For the discovery of suspicious activity” prominently on the explanation sticker as grounds for reporting

Source) MLIT

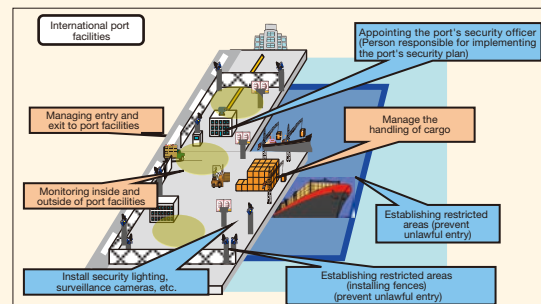
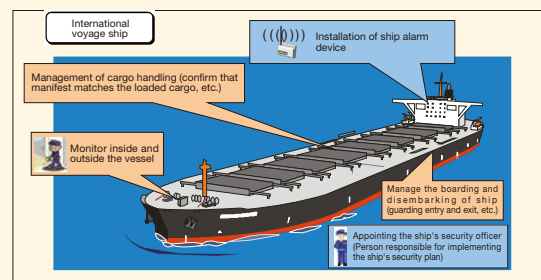
② Promoting Counter-Terrorism Measures for Ships and Ports

Ensuring security is done through the approval of security rules and ship inspections of international voyage ships, approval of security rules for international port facilities, regulation of arriving ships, and site inspections of international voyage ships and international port facilities as well as Port State Control (PSC) in accordance with the “Act on Assurance of Security of International Ships and Port Facility.” Also, security measures are being made more comprehensive in light of the results of site inspections of international port facilities and security levels of other countries.

③ Promoting Counter-Terrorism Measures for Aviation

In order to do everything possible to prevent a terrorist attack involving aircraft in our country, the aviation security measure is being strengthened in accordance with the international standards regulated by the Convention on International Civil Aviation. In these circumstances, new strengthening measures are being implemented to cope with cases of terrorism and unlawful entry in domestically and internationally, each airport is being strengthened with measures such as fences to prevent the intrusion of vehicles or people and sensors are installed so that when there is an intrusion, a swift response can be made and from October 2012 international flight passengers are subject to random manual search to prevent explosives and other objects that cannot be discovered by metal detectors from carrying on the aircraft.

Graphic II-7-5-4 Security Measures for International Voyage Ships and International Port Facilities



Source) MLIT

Note Displaying Security: Measures to proactively prevent terrorism by making security highly visible to people. User Participation: Measures to promote each individual railway user to be aware of preventing terrorism and take appropriate actions to strengthen the network for monitoring terrorist activities.

④ Promoting Counter-Terrorism Measures for Automobiles

Relevant businesses are instructed to carry out inspections inside vehicles, strengthen patrol of the insides and perimeters of business offices and garages, and dispatching security officers to major bus stops during seasons with increased travelers.

⑤ Promoting Counter-Terrorism Measures for Major Facilities

For various river facilities special attention is paid for suspicious objects during river inspections and sight patrols; the lockdown of entries and exits of dam management offices and dam body inspection corridors is also being strengthened. For various road facilities, special attention is paid to suspicious objects when patrolling expressways and directly managed roads and the trash boxes of rest facilities is also being aggregated. For national parks, security patrols are strengthened and caution is called for with various bulletins. At construction sites signboards are installed along with other measures calling for greater caution.

(3) Crime Prevention Measures for Automobiles

In order to prevent the fraudulent procurement and misuse of vehicle registration information, during the issuing and request for proof of registration, etc., the claimant is requested proof of identity and as a general rule, the display of the chassis number along with the vehicle registration number is required.

(4) Balancing Security and Efficiency of Logistics

For international logistics, industrialized nations and international organizations are playing a central role in initiatives to balance security and efficiency. In our country, the spread of the AEO system^{Note 1} is being promoted for logistics businesses and support is given to various countries to obtain AEO. Starting in FY 2011, export filings from AEO approved businesses are able to get “permission” from outside bonded areas.

For the security measures for air cargo with the purpose of securing air cargo from the shipper to loading on aircraft, the KS/RA system^{Note 2} based on international standards established by the ICAO is adopted. From October 2012, to strengthen the security of air cargo bound for the United States of America and to maintain smooth logistics, this system was revised to further strengthen security measures.

Also, in the container terminals of major ports, to accurately confirm the identity and association of truck drivers an access management information system is being implemented (a test run will began at the end of FY 2010).

(5) Information Security Measures

As the dependence on IT for socio-economic activities in general continues to grow, various cyber attacks are becoming more prevalent such as email attacks targeted toward government institutions, increasing the importance of initiatives for information security measures. In accordance with the policy of the “Information Security Policy Committee,” security policies for MLIT are being promoted with measures to prevent information leaks. Also, efforts are being made for implementing an initial response system and preventing the spread of damages in the event of a cyber attack against MLIT. And, security policies for critical infrastructure (rail, air, logistics) are being promoted with creation of guidelines to prevent the disruption of operations due to IT outages.

Note 1 This system rewards international shippers with superior security measures for their supply chain with certification as Authorized Economic Operator (AEO) by customs and gain the benefit of streamlined customs procedures.

Note 2 A system that confirms the security of all air cargo before loading the aircraft for designated shippers (Known Shipper), designated air cargo shipping businesses or designated air shipping agents (Regulated Agent), or airline companies.

2 Establishing a Response System for Accident Disasters

When accident disasters such as accidents involving multiple fatalities occur on rail, air, etc. or ships are involved in oil spill accidents, the disaster conditions are assessed and a disaster measures headquarters is established within MLIT (for especially large-scale accident disasters in the field of transport the government will establish an emergency disaster measures headquarters, etc.) to collect and aggregate information and comprehensively coordinate with relevant government organizations and other parties for urgent disaster measures to ensure that swift and appropriate disaster measures are implemented.

For accident disasters at sea, coordination with relevant organizations is being furthered such as ensuring a dispatch system for patrol vessels and aircraft and readying disaster mitigation equipment in addition to implementing joint training. Also, for pollution accidents involving oil or hazardous and noxious substances, response equipment is being improved to strengthen the system for a swift and effective response and environmental protection information on coastal waters needed to contain oil, etc., is being compiled and provided.

3 Strengthening the Maritime Safety/Security System

(1) Improving and Strengthening the Operational System

In accordance with the recent changes in the conditions regarding the protection of territorial sea and properly respond against intrusion into territorial sea, 1,000 ton patrol vessels with control capacity, patrol capacity, and speed and helicopters with the capacity to pursue, capture, and monitor are readied and to appropriately respond to distant waters and major incidents, Shikishima-class patrol vessels equipped with helicopters are readied. Also, mainly to respond to large-scale disasters expected to occur in the future, patrol vessels with the ability to respond to disasters are being readied. Additionally, improvements such as establishing an operational command department for patrol vessels and establishing rotating crews for patrol vessels are being undertaken to strengthen the coast guard system.

(2) Promoting Counter-Terrorism Measures

For measures to proactively prevent terrorism, hazardous material facilities such as nuclear power plants and petrochemical complexes as well as U.S. Armed Forces facilities in coastal areas are being patrolled as needed by patrol vessels and aircraft. Also, during Golden Week, summer vacation, and the Year-end and New Year holidays and other periods where passenger travel is the most active, security is especially tightened in passenger ship terminals where many people are concentrated.

Also, as noted previously, to proactively prevent terrorism, there is a need to not only coordinate with relevant organizations but the private sector as well and the Japan Coast Guard encourages those in the maritime industry to strengthen their self-protection security efforts and provide information on suspicious activity for the implementation of initiatives involving coordination with the region.

(3) Promoting Measures Against Suspicious Vessels and Spy Ships

There are suspicions that suspicious vessels and spy ships are engaged in serious violent crime in the territorial sea of Japan and to shed light on their objectives and activity details, suspicious boats needs to be detained to implement a site inspection and if crime is discovered to arrest criminals and carry out a proper criminal investigation. For this reason, in response to suspicious vessels and spy ships, relevant government agencies will be coordinated with but the Japan Coast Guard will serve as the policing organization and carry out the initial response.

The Japan Coast Guard will conduct various training as well as closely work with relevant agencies, etc. to exchange information to strive for the early discovery of suspicious boats and spy ships as well as maintain and improve capabilities for responding to suspicious ships.

(4) Promoting Measures against Maritime Crimes

Some major characteristics of recent maritime crimes include a diversity of non-fishermen casually engaging in maritime poaching crimes as well as organized criminals seeking sources of funding and environmental crimes such as

illegal dumping of waste into the ocean to save processing costs and its characteristics are becoming more malicious and sophisticated. Also, it is suspected that much of the domestic crimes involving drugs and guns as well as violent crimes by visiting foreigners have some degree of involvement with organized crime and international crime syndicates engaged in smuggling and illegal entry.

Regarding various maritime crimes, there is still a need for vigilance and the Japan Coast Guard is strengthening monitoring and surveillance, gathering and analyzing crime information, and strengthening site inspections by effectively utilizing patrol vessels and aircraft as well as sharing information with relevant domestic and international organizations as part of the efforts to pursue effective measures and take strict and appropriate measures against maritime crimes.

4 Protecting Our Country's Interests in Maritime Rights

(1) Security Activities to Protect Maritime Interests

Recently around Senkaku Islands, there have been cases where foreign fishing boats have operated fishery in the territorial sea of Japan, official boats from China and Taiwan have encroached upon the territorial sea of Japan and Chinese and Taiwanese activists have sought to stake territorial claims. Particularly since the government acquisition and possession of three of Senkaku Islands, Official boats from China constantly loiter around those islands and the number of cases is increasing where they intrude into the territorial sea of Japan.

Also, unauthorized scientific ocean surveys by vessels from China, Taiwan, etc., were conducted in Japan's Exclusive Economic Zone in the East China Sea, etc. Foreign countries are increasing their activities threatening Japan's maritime interests.

In response to these tense conditions, the Japan Coast Guard advanced legislative changes to strengthen maritime policing powers including the improvement and strengthening of prosecution powers of Japan Coast Guard officers among other measures by coming into force the "Law for the Partial Revision of the Japan Coast Guard Act and the Law on Navigation of Foreign Ships through the Territorial Sea and Internal Waters, etc." in September 2012. Additionally, the security system of territorial sea is being strengthened by conducting appropriate territorial sea patrols through patrol vessels and aircraft as well as monitoring and vigilance activities in Japan's Exclusive Economic Zone to secure Japan's sovereignty and protect maritime rights.

(2) Promoting Maritime Surveys in Territorial sea and the Exclusive Economic Zone and Consolidating Maritime Information

In our country's territorial sea and the exclusive economic zone there are sea areas lacking adequate survey data. The Japan Coast Guard (JCG) is conducting intensive hydrographic surveys in these sea areas including seafloor topography, crustal structure and the territorial sea baselines to strategically and continuously implement the basic information that contributes to the safety of navigation, secure our country's maritime interests, and ocean development. Also, under the synthesis coordination of the Secretariat of the Headquarters for Ocean Policy, Cabinet Secretariat, JCG operates the web service "Marine Information Clearing House" which provides unified information concerning locations and meta-data of various marine information and ocean scientific data that governmental agencies or institutes preserve. In addition, JCG developed and started to operate the "Marine Cadastre" which is a WEB-GIS service that enables users to overlay information on maps for easy utilization of various natural information (seafloor topography, ocean currents, water temperature, etc.) and social information (port areas, fishery rights areas, etc.).

(3) Initiatives to Delineate the Outer Limits of the Continental Shelf

In April 20, 2012, the UN "Commission on the Limits of the Continental Shelf" adopted the recommendation in regard to the submission made by Japan in November 2008 on the outer limits of the continental shelf beyond 200 nautical miles in accordance with the United Nations Convention on the Law of the Sea. In the recommendation, the seafloor equivalent to roughly 80% of Japan's land territory in dimension was approved as Japan's extended continental shelf but the examinations for some area were postponed. Therefore, the Japan Coast Guard is continuously working for delineating the continental shelf under the synthesis coordination of the Secretariat of the Headquarters for Ocean Policy Secretariat, Cabinet Secretariat in cooperation with relevant government agencies.

(4) Conservation of Okinotorishima, Protecting the Low-Tide Line and Developing the Base of Activities

① Conservation of Okinotorishima

Okinotorishima is our nation's southernmost territory and is an extremely important island that forms the foundation of rights to roughly 400,000 km² of Exclusive Economic Zone which surpasses our national land area and is under our nation's direct management to take adequate measures which serves as the premise for the possibilities for effective utilization in accordance with its importance to protecting national land and its utilization.

② Preservation of Low-Tide Lines

In accordance with the "Low-Tide Line Preservation Act," etc., 185 areas nationwide are designated as low-tide line preservation areas by government ordinance thereby restricting activities in the areas. Also, sight patrols by disaster prevention helicopters and ships as well as satellite images are used to survey low-tide lines and its surrounding conditions and by confirming the existence of restricted activities in the area or topographical changes due to natural erosion, strive to protect the low-tide line which forms the basis of the Exclusive Economic Zone and continental shelf as well as appropriate management of related information for the implementation of sure and efficient preservation of low-tide lines.

③ Developing Bases of Activity in Remote Islands (Okinotorishima and Minamitorishima)

In accordance with the "Low-Tide Line Preservation Act," etc., to ensure that activities regarding the development and use of maritime resources and activities regarding maritime surveys are carried out safely and steadily, for remotely located islands bases of activity are being developed where ships can moor, anchor, and handle freight is being promoted. Construction began in FY 2010 for Minamitorishima and in FY 2011 for Okinotorishima and development will continue to be advanced.

Graphic II-7-5-5 Conserving the Low-Tide Line

Promoting Measures Regarding the "Law on the Development of Base Facilities and Preservation of the Low-Tide Line for the Promotion of Use and Conservation of the Exclusive Economic Zone and Continental Shelf (Low-Tide Line Preservation Act)" (passed June 2010)

<< Conserving the Low-Tide Line >>

- Matters requiring conservation in the surrounding waters of the low-tide line which form the basis of the boundary lines of the Exclusive Economic Zone, etc. are designated as low-tide line conservation areas (185 areas) and activities within these areas are restricted.
- Satellite images, disaster prevention helicopters, and ships are used to monitor and research the conditions of the low-tide line and any artificial damages or natural erosion.

<< Development of Activity Bases on Remote Islands >>

- In order to ensure that the development and usage of maritime resources and maritime research activities are implemented safely and steadily in waters located far away from the mainland, the Minister of Land, Infrastructure, Transport and Tourism implements the development and management of port facilities (designated remote island port facilities: the development details are stated in the basic plan).
(Minamitorishima) Construction started in FY 2010, completion scheduled in FY 2015.
(Okinotorishima) Construction started in FY 2011, completion scheduled in FY 2016.



5 Security and Protecting Citizen's Lives and Assets

(1) Responding to North Korea Issues

In response to the North Korea launching ballistic missiles and conducting nuclear tests, in accordance with the "Act on Special Measures concerning Prohibition of Entry of Specified Ships into Ports," all ships registered to North Korea are prohibited from entering Japan's ports and in light of the international situation this measure was extended to April 13, 2013. The Japan Coast Guard is implementing the confirmation of information regarding the entry of North Korean ships into ports to ensure that this measure is completely adhered to. Also, to ensure the effectiveness of import and export restriction measures against North Korea in accordance with the United Nations Security Council Resolution 1874, MLIT and the Japan Coast Guard conducts joint training with relevant government organizations in close coordination and

ensure the legal effectiveness of measures in accordance with the “Act on Special Measures concerning Cargo Inspections etc. Conducted by the Government Taking into Consideration United Nations Security Council Resolution 1874, etc.”

Also, in light of leadership changes at North Korea, MLIT is strengthening its readiness including information gathering and communication to thoroughly implement measures in preparation of worst case scenarios and will continue to maintain the monitoring and watching framework. Also, for the cases of missile launches referred to “artificial satellites” conducted by North Korea on April, 13 and December 12, 2012, information was collected and shared as part of the efforts to ensure the safety and comfort of citizens.

(2) Responding to Armed Attacks Situations and Other Situations Under the Civil Protection Plan

In accordance with the “Act concerning the Measures for Protection of the People in Armed Attack Situations, etc” and “Basic Guidelines for Protection of the People” which stipulates measures regarding the evacuation, rescue and minimization of losses due to armed attacks situations, etc., MLIT, the Geographical Survey Institute, the Japan Meteorological Agency, and Japan Coast Guard stipulate “Civil Protection Plan.”^{Note} MLIT will implement support such as communication and coordination with designated public institution that serve as transporters for the transport of evacuating residents in accordance with requests from local government; the Japan Coast Guard is designated to carry out the transport of evacuating residents and emergency supplies when the transport capacity of designated public institution is insufficient and to carry out search, rescue, and emergency activities.

6 Infectious Disease Measures

Regarding measures for the novel influenza, in accordance with the government’s action plan being revised on September 20, 2011, MLIT’s action plan was also revised and to make it possible to flexibly implement measures in accordance with the degree of virulence as well as cooperation with transportation companies and other businesses that maintain society’s functions to further clarify the system for measures to be implemented by the ministry as a whole. The main points of this revision is ① to strengthen measures to maintain society’s functions by transportation companies and others in preparation of the occurrence and spread of new strains of influenza that are highly virulent, ② to categorize outbreak conditions in prefectures in the three steps of “region unaffected stage,” “region early outbreak stage,” and “region infected stage,” ③ to add of bird influenza measures.

In accordance with the government’s action plan, during the period when outbreaks occur abroad, to limit and monitor the entry pathway of the novel influenza from abroad into the country, when the domestic quarantine implementation sites are consolidated, to ensure that it is implemented smoothly, seek the cooperation of airport and port administrators and during the domestic infection period carry out support for transport requests of medical, food, and other supplies. Also, for transportation companies that maintain society’s functions, it is important that the formulation of business continuity planning are actively carried out before the novel influenza outbreaks and when the outbreak does occur to execute the business continuity planning and focus on carrying out those activities and to support the drafting of business continuity plans so that transportation companies can continue to do business and implement measures to prevent the outbreak from spreading further among other necessary support.

Also, for the purpose of strengthening measures against novel influenza, etc. and protect the lives and health of national citizens and minimize effects to the national economy, the “Act on Special Measures for Novel Influenza, etc.” (hereinafter the “Special Measures Act”) was promulgated in May 2012. The Special Measures Act establishes that businesses in general have a legal obligation to take appropriate measures in the conduct of business to cooperate with measures and registered businesses have a legal obligation to continue business operations that contribute to the stability of national citizen’s lives and the economy and designated public institution as transportation companies will have the responsibility of taking all appropriate measures needed to properly implement the transport of people and cargo in accordance with the business plan stipulated when emergency situations such as an outbreak of novel influenza occurs.

Also for the smooth implementation of measures, an expert’s meeting on measures against novel influenza was hosted by the government in preparation for the law coming into effect in May 2013.

Note Following the establishment of the Japan Tourism Agency in October 2008, MLIT’s plan was changed to the “MLIT and Japan Tourism Agency Civil Protection Plan.”

Chapter 8

Creating and Preserving a Beautiful and Healthy Environment

Section 1 Promoting Countermeasures against Global Warming

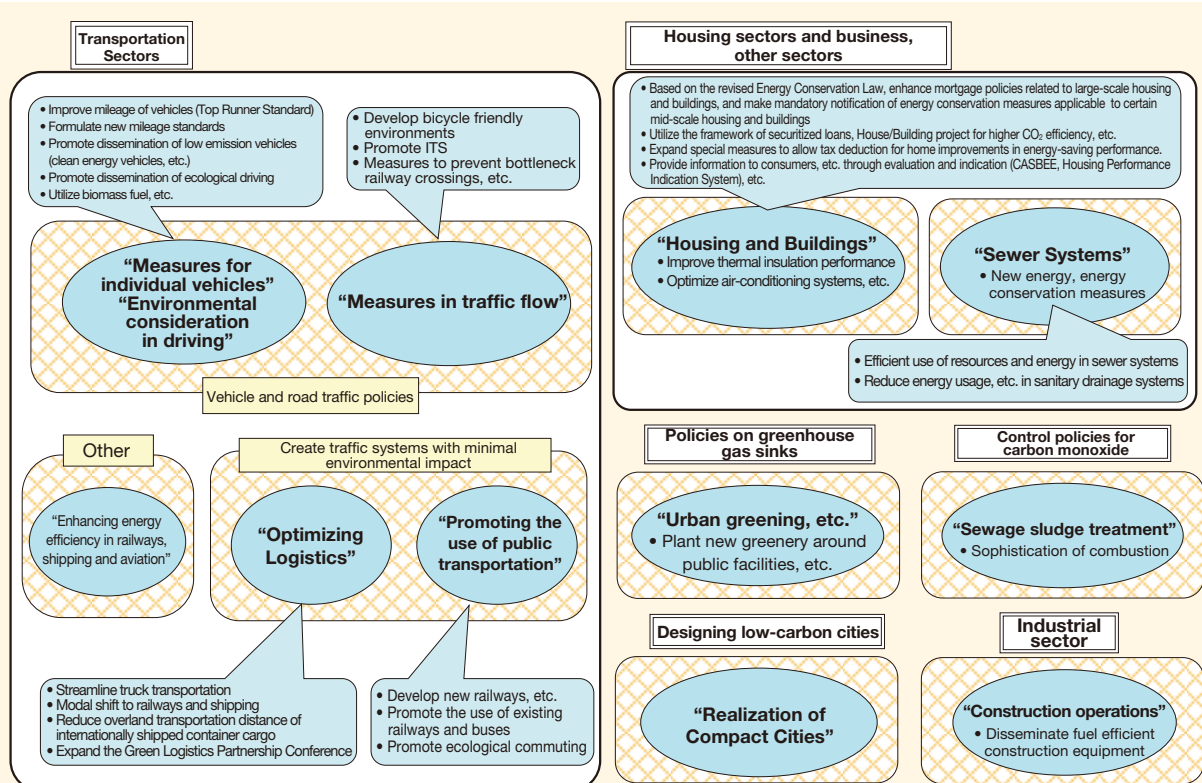
1 Execution of the Kyoto Protocol Objective Achievement Plan

Based on the Kyoto Protocol, ratified during the 3rd session of the Conference of the Parties (COP3) of the United Nations Framework Convention on Climate Change held in 1997, it was decided that Japan would reduce the emission of greenhouse gases, such as carbon dioxide (CO₂), by 6% between 2008 and 2012 in comparison to 1990, the reference year for the first commitment period.

The Kyoto Protocol Objective Achievement Plan, established for fulfilling the commitment, stipulates goal values respective to each division in the transportation sector, commercial sector, etc. The following measures are being implemented to make certain that reduction objectives are fulfilled.

- The transportation sector is ① taking environment into consideration for measures specific to each vehicle and driving, ② implementing measures in traffic flow, ③ streamlining logistics, ④ stimulating the utilization of public transportation, and ⑤ enhancing energy efficiency in trains, shipping and aviation.
- The commercial housing and building sector is improving thermal insulation performance, etc., and optimizing air-conditioning facilities, etc.
- Realization of compact cities, implementation of new energy or energy-saving measures in sewage, and advancement of incineration in sludge treatment, greening cities to serve as sinks for greenhouse gases, etc.
- Industrial sectors are promoting dissemination of fuel-efficient construction equipment.

GraphicII-8-1-1 MLIT Countermeasures towards Global Warming



Source) MLIT

According to the definitive values from 2011, Japan's greenhouse gas emissions reached 138 million tons (3.7% more than the reference year). However, considering the amount expected to be absorbed by forests and acquired Kyoto Mechanisms Credits, the average emission throughout the 4 years from 2008 to 2011 was reduced by 9.2% in comparison to the reference year. Although each initiative requires further deliberation, the objective of reducing emissions by 6% is believed to be achievable.

Despite the "Carbon dioxide tax for global warming countermeasure" being introduced in October of 2012, sectors in shipping, railways and aviation (all part in mass transit with little environmental impact) were provided with special taxation measures. This is due to their contributions to the countermeasures against global warming through the promotion of modal shift and by stimulating the use of public transportation. Meanwhile, the "Low Carbon City Act" has been ratified to advance the transition to compact cities by promoting the use of public transportation and consolidation of city functions. In other fronts, various regulations are undergoing revision and mitigation to expand the implementation of renewable energy. By combining a wide array of policy means throughout the future, Japan is promoting energy conservation and the implementation of renewable energies to the best of our abilities.

Japan has decided to undertake initiatives without participating in the Kyoto Protocol Second Commitment Period (2013 to 2020), and instead will establish the "Global Warming Countermeasure Plan" for 2013 and onward. In light of these activities, the Panel on Infrastructure Development: Environment Committee and the Council of Transport Policy Transportation Subcommittee: Environment Committee are deliberating the medium-term Global Warming Countermeasure Plan for the MLIT.

2 Measures in the Transportation Sector

The emissions from the transportation sector, which accounts for 20% of all CO₂ produced by Japan, amounted to 230 million tons according to definitive values of 2011. The goal of between 240 million tons and 243 million tons, set as the criteria for 2011 by the Objective Achievement Plan, has now been fulfilled 4 years in a row since 2003. Japan is now pushing forward measures for further reduction of emissions.

(1) Environmental Consideration in Individual Vehicles and Driving

① Improving Mileage in vehicle:

We are formulating the mileage standards of Top Runner Approach^{Note} and publishing vehicle mileage in accordance with the "Law Concerning Rational Use of Energy (Energy Saving Law)," and in 2007 we established mileage standards with 2015 as the objective year. Of all gasoline powered vehicles consigned in 2011, over half attained levels that satisfy the mileage standard for the objective year 2015. The average mileage level rose approximately 30% in comparison to 2004. Furthermore, we will formulate new mileage standards in 2012 aiming for 2020, and plan further mileage improvements.

② Schemes to stimulate improvements in mileage capabilities and reduction in exhaust gas.

In order for consumers to easily identify and select vehicles with high mileage capabilities, we have implemented systems to evaluate and disclose mileage capabilities of vehicles to stimulate their dissemination. Additionally, for vehicles that emit lower amounts of harmful substances than the latest exhaust gas standards, we are implementing the "low emission vehicle recognition system," according to how much less exhaust is emitted by the vehicle. The indication for mileage capabilities are marked by a "2015 Mileage Standard Fulfilling Vehicle" sticker.

③ Promoting the dissemination of environmentally friendly vehicles

In the promotion of environmentally friendly vehicles, the classification for vehicles was reorganized in the tax reform of 2012, based on new mileage standards. Revisions and expansions were made to add conventional vehicles with mileage capabilities equivalent to hybrid vehicles to the scope of tax reduction. Furthermore, we are planning to extend "eco car" tax reductions (reductions in vehicle weight tax and vehicle excise tax) and green exception (vehicle tax) for vehicles with superb ecological capabilities (eco cars).

In 2012, the number of sold vehicles applicable to eco-car tax reductions accounted for approximately 73% (3.65 million vehicles) of all vehicles sold in Japan.

Note Method for establishing standards by considering future prospects the capabilities and technological development of the currently commercialized products with the best capabilities.

From the perspective of countermeasures against global warming and air pollution in large cities, we are enforcing policies to disseminate environmentally friendly vehicles such as by supporting the usage of CNG vehicles,^{Note 1} hybrid vehicles, and electric vehicles by truck, bus and taxi businesses. We are also supporting the implementation of a new category of transportation that contributes to energy conservation and low-carbon called “Ultra Lightweight Vehicles.”

④ Development, application and creating a usage environment for next generation heavy vehicles

In order to promote the development and application of next generation heavy vehicles, we have been developing the technology of high-efficiency hybrid trucks, electric and plug-in hybrid trucks, and high-performance electric buses since 2011. In the future, demonstration test runs shall be conducted under actual operating conditions for these prototypes, then we will move forward with initiatives to promote practical use.

⑤ Promoting and disseminating ecological driving

By cooperating with related departments and agencies, we revised the “Eco Drive 10 Recommendations” during the “Eco Drive Promotion Month” in November 2012. We also focused on conducting symposiums and lectures, and worked on educational activities for disseminating ecological driving through press releases. Furthermore, we are working to promote the dissemination of the Ecological Management System (EMS)^{Note 2} to vehicular transpiration businesses.

(2) Facilitation of traffic flow

Because increasing the speed of driving by facilitating traffic flow improves mileage and decreases the amount of CO₂ emitted from vehicles, we are implementing various measures for traffic flow. Specifically, in order to alleviate traffic congestion in urban areas, we are arranging the arterial expressway network with belt highways which curbs the inflow of traffic to the inner-city by providing an alternative route for traffic moving through urban areas. Additionally, we are promoting three-dimensional intersections and the continuous grade separation project to eliminate railway crossings that stop traffic, and advancing the creation of a bicycle friendly environment by redistributing road space. Furthermore, we aim to eliminate traffic jams by providing information of detailed traffic information from road infrastructures such as ITS spots set in the center of expressways. Also, in order to promote energy conservation in road installations, we are implementing LED lighting on updated and newly constructed road lights.

(3) Optimizing logistics

Exceeding 50% of the total domestic transportation means in Japan, trucking accounts for the majority of the share ratio (ton to kilometer basis in transportation). The CO₂ discharge rate^{Note 3} of trucks is greater than that of mass transits such as railways and domestic shipping, and accounts for up to 90% of the CO₂ output in logistics. In order to reduce CO₂ emission while sustaining domestic logistics, we must strive to utilize energy efficient transportation means such as railways and domestic shipping in addition to improving energy efficiency and transportation efficiency of each truck, in combination with transitioning trucking^{Note 4} from private to commercial means. In attempt to promote the modal shift to railways, roads and shipping, we are undertaking the railway cargo transportation enhancement project (completed in March 2013) at the Sumidagawa Station, conducting projects to promote low-carbon logistics that utilize railways, in a joint effort with the Ministry of Environment, and working to develop the use of domestic shipping and ferries by

Note 1 CNG vehicles refers to vehicles utilizing compressed natural gases.

Note 2 System for the systematic and continual execution of ecological driving in vehicular transportation and its integral evaluation and instruction.

Note 3 Amount of CO₂ emitted when 1 ton of cargo is transported over 1 kilometer.

Note 4 The transition from private trucks (trucks for personally transporting private cargo) to commercial trucks (truck transport cargo for a fee in accordance to requests from others) in order to lower transport costs through increasing transportation efficiency by consolidating cargo of numerous consignors.

promoting the construction of energy efficient vessels. We also work to disseminate the “Eco Rail Mark” (recognition of 78 cooperating enterprises of 99 products (153 items) as of March 2013), and the “Eco Ship Mark” (Recognition of 73 consignors and 88 logistics businesses as of December 2012). In ports and harbors, which act as nodal points between overland and overseas transportation, we are implementing initiatives to conserve energy within ports and harbors, implementing, facilitating, and applying renewable energies and expanding carbon dioxide sinks. Moreover, we strive to reduce overland transportation distance of international cargo by building infrastructure such as foreign trade container terminals.

Beyond the activities mentioned, relevant government agencies and public organizations worked together to hold the Green Logistics Partnership Conference and are providing support to consignors and transportation businesses in cooperative activities related to reducing CO₂ emissions by awarding high achieving business and presenting examples of excellence. Furthermore, through the “Modal Shift Promotion Project,” we are supporting activities in modal shift conducted by the committee consisting of consignors and logistics businesses.

Graphic II-8-1-2 Promotion of activities through the Green Logistics Partnership Conference

Activities aimed towards promoting cooperation between consignors and logistics businesses

Green Logistics Partnership Conference Established in April 2005

Host: Japan Institute of Logistics Systems, Japan Federation of Freight Industries, Ministry of Economy, Trade, and Industry, Ministry of Land Infrastructure, Transportation, and Tourism
 Cooperation: Nippon Keidanren (Japan Business Federation)
 Participants: logistics businesses, consignor enterprises, various organization in the field, think tank, research institutions, local branch bureaus, local public organizations, private enterprises with more than 3,200 individuals, participants registered by organizations (as of December 2011)

Substance of activities by the Green Logistics Partnership Conference

- Initiatives for expanding the Green Logistics Partnership Conference (CO₂ reduction through the cooperation between consignors and transportation businesses)
- Host the “Green Logistics Partnership Conference,” award high achieving businesses and present examples of excellence.

11th Green Logistics Partnership Conference

Date of conference: Tuesday, December 11, 2012
 Conference of location: METI Main Building, Shared Conference Room 1 and 2
 Attendees: 156 individuals

Year 2012, MLIT Director-General for Policy Planning Award
 Project name: Model of logistical optimization for consumer appliances enabling CO₂ reduction

Summary of the awarded enterprise
 Realized large-scale collaborative shipments and achieved reduction in CO₂ emissions by unifying different transportation systems between multiple household appliance manufacturers and various mass retailers in addition to consolidating shipment destinations.

Modal Shift Promotion Project Established in 2011

Promotion of modal shift aimed towards transitioning to transportation methods with lower CO₂ output by aiding in costs needed in business based on the Modal Shift Promotion Project conducted by the committee consisting of consignors and transportation businesses.

Modal Shift Promotion Project Plan

Formulation of the Modal Shift Promotion Project Plan (statement of traffic volume, time span, CO₂ reduction quantity, and etc.) by a committee consisting of consignor enterprises and transportation businesses.

The committee executes projects based on the Modal Shift Promotion Project Plan.

State Aid
 Recognition of enterprises (committee) subject to aid through expert evaluation and provision of aid (up to 1/2) in operation.

Source) MLIT

(4) Promoting the use of public transportation

The shift from private vehicles to public transportation reduces travel with vehicles and is a necessary facet of global warming countermeasures. For this reason, we are promoting automation such as implementing IC cards, and improving the convenience of public transportation through better transit connections. We also encourage ecological commuting in each business establishment through the Ecological Commuting Outstanding Business Certification Scheme, as well as spread environmentally friendly commuting by cooperating with regional schemes that promote

Graphic II-8-1-3 Promotion of “ecological commuting” through mobility management

Mobility management (ecological commuting)

Promoting ecological commuting in business facilities of enterprises, etc. through mobility management.

Before implementation
 (Mostly targeting commuters using personal vehicles)
 Issues: Occurrence of traffic congestion, Deterioration of the surrounding environment, Tardiness or traffic accidents of employees

After implementation
 Park and ride, etc., Commuting with public transit, Carpool commuting, Bicycle commuting

Efforts in the business facility
 Encouragement to employees, Provision of information for trains and buses, Reevaluation of commuting systems, Implementation of commuting buses, etc.

Ecological Commuting Outstanding Business Certification Scheme Established June 2009
 Secretariat of Scheme: MLIT, Foundation for Promoting Personal Mobility and Ecological Transportation
 Certification and registration of business facilities that actively implement ecological commuting by the Conference on Promotion of Public Transportation (MLIT, Ministry of the Environment, METI, traffic businesses, economic organizations, individuals with relevant knowledge and experience)
 578 business facilities registered as of March 2013

Source) MLIT

ecological commuting. Furthermore, information analysis and validation results of past activities for the “Environmentally Sustainable Transport (EST) Model Project” were provided nationwide to regions working to realize EST.

(5) Enhancing energy efficiency of railways, ships and aviation

① Initiatives contributing to further enhance environmental capabilities in the railway sector

Although the railway has little environmental strain in comparison to other modes of transport, in order to further reduce environmental strain, we are promoting the technological development of battery powered trains and the implementation of energy efficient railway cars.

② Initiatives for improving energy efficiency and low-carbonization in shipping

Efforts for conserving energy are being promoted in domestic shipping through the “Composite Measures for Green Shipment,” such as the dissemination of super eco ships^{Note 1} and by supporting the implementation of technologies and facilities that contribute to energy conservation and low carbonization. In international shipping, with the “Maritime Environment Initiative,” the MLIT has supported development relevant to improvement of energy efficiency and CO₂ reducing technologies with a view in reducing the CO₂ emissions from shipping by 30%. In parallel, the MLIT has played a pivotal role to formulate international regulations and standards of the energy efficiency measure including EEDI(Energy Efficiency Design Index) and MBM (Market-Based Measures)to address CO₂ emissions from international shipping. In addition, from 2012 onwards, the MLIT initiated the coordination project which aims at smooth and earlier introduction of LNG fuel ships in the shipping market.

③ Initiatives to reduce CO₂ emissions in aviation

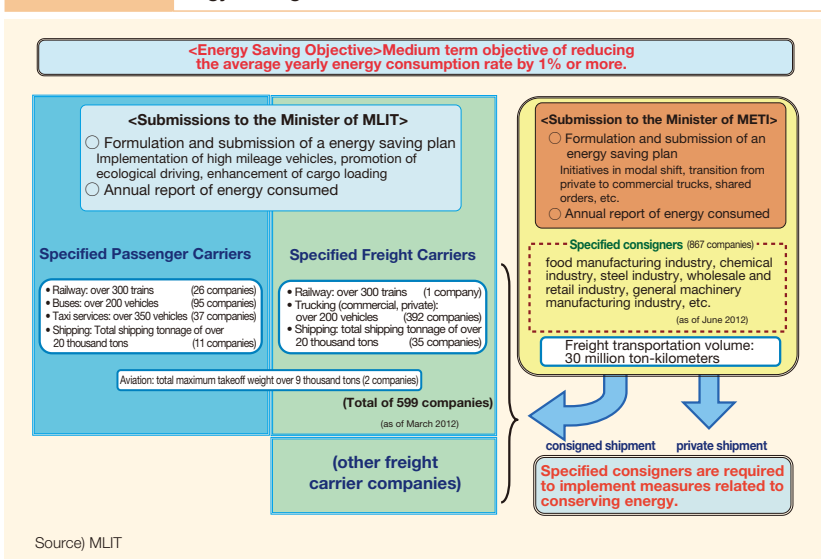
We are advancing the implementation of area navigation (RNAV), which enables shortening flight time and distance and the UPR^{Note 2} method, which allows the flight to have the most efficient altitude desired by the pilot, as well as enhancing aerial traffic systems by implementing the Continuous Descent Operation (CDO) which sustains minimal engine output by continuously descending without leveling out at any point during descent. We also promote the use of ground power units (GPU) for airplanes and ecological cars such as GSE^{Note 3} vehicles as part of Eco Airport(eco friendly airport) activities. Furthermore, we are strengthening international initiatives, such as participating in the “Asia and Pacific Initiative to Reduce Emissions (ASPIRE)” where air traffic control authorities and airline companies cooperate to attain efficiency in flying.

(6) Promoting initiatives by private businesses

Based on the “Energy Saving Law,” certain logistics businesses and consigners are obligated to submit periodic reports, aimed to further curb the amount of energy used in the logistics sectors and advance efforts in energy conservation. Furthermore, in order to promote the business operation with little environmental strain (green business operation), we are striving to disseminate the “Green Business Operation Certification Scheme” which recognizes logistics businesses with vehicles, shipping, warehouses and ports for environmental initiatives based on the Green Business Operation Manual.

Graphic II-8-1-4

“Improvements to energy efficiency in transit sectors by the “Energy Saving Law”



Note 1 Next generation domestic vessels with excellent environmental capabilities and economic capabilities that utilize electronic propulsion systems that enhance mileage and reduce CO₂ and NOx emissions.

Note 2 User Proffered Route

Note 3 Ground Service Equipment

Column

Efforts Towards Promoting the Smooth Implementation of Renewable Energy in Ports and Harbors

“Manual showing Steps for Implementation”

After the occurrence of the Great East Japan Earthquake, the need for the dissemination of renewable energy generation in Japan has heightened. In wind power generation, one of the major types of renewable energy, operations have traditionally been in mountainous regions. Now, coastal waters are being appraised as new sites for operation for the stable strong winds and space, which enable large-scale wind farms. Of these waters, ports and harbors are gaining attention as deployment sites. In most cases, ports and harbors already possess infrastructures such as roads and power lines, accumulated from past industrial operation, required for wind power generation. Ports and harbors also have equipment required for unloading transported large-size machinery and port yards that can be used for assembly. These areas are therefore an ideal environment for actual deployment of wind power. Furthermore, because the public organization over the management of these waters are clearly under the jurisdiction of the port management body, anticipation mounts for ports and harbors becoming major sites to deploy fixed-base floating turbines (14 installments as of 2012).

However, ports primarily serve as nodal points for transportation and logistics; therefore the implementation of wind power turbines must coexist with this function. With that, the MLIT collaborated with the Ministry of Environment to assess specific tasks required for the coexistence of functions and published a manual in June 2012 (“About Wind Power in Ports and Harbors –Manual for Port Operation Management and Coexistence” herein referred to as “Manual”) describing steps required for the smooth implementation of wind power into ports and harbors.

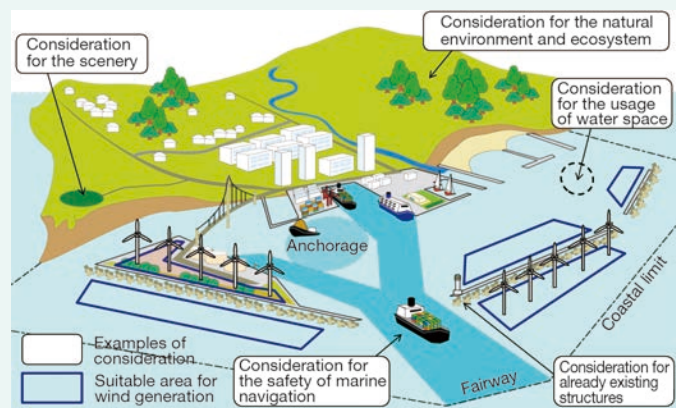
This manual suggest the establishment of committees where all relevant organizations meet to discuss the implementation of wind power, conditions of suitable places where the location of wind power can coexist with the primary function of ports, as well as the recruitment of wind power businesses within suitable areas, and steps for smooth implementation. In actuality, plans are progressing in accordance with this manual at the Ibaraki Kajima and Yamagata Sakata ports.

Offshore wind power at Hokkaido Setana Port (Two 600kW turbines)



Source) MLIT

Image of how wind power turbines can coexist with primary functions of ports and harbors



Source) MLIT

3 Measures related to housing, buildings, sanitary drainage, urban greening, etc.

(1) Enhancing energy saving capabilities in housing and buildings

Compared to past eras, the rise in the amount of energy consumed by the civilian sector is more prominent than in other sectors, which makes improving energy saving capabilities in housing and buildings an urgent task. In light of this issue,

the “Conference for promoting housing and living to create a low carbon society” was held with experts and practitioners, the cooperation of the MLIT, the Ministry of Economy, Trade and Industry, and the Ministry of the Environment. Discussions over the future direction of measures in energy conservation in housing and buildings, as well as mandating energy saving standards, took place at the conference; the results were organized in an interim summary. In addition, we reevaluated the standards for comprehensively assessing the consumption of primary energy together with created energy, based on the “Energy Conservation Law” (scheduled to come into effect in 2013). Furthermore, the low carbon building certification system, based on the “Low Carbon City Promotion Act,” has taken effect; we now aim for its dissemination.

In other fronts, we are working to develop and disseminate the Housing Performance Indication System that effectively demonstrates energy conservation capabilities, and the Comprehensive Assessment System for Built Environment Efficiency (CASBEE) that integrally evaluates enhancing livability (indoor environment) and reducing environmental strain of housing and buildings as comprehensive environmental capabilities.

In addition, as supportive measures for implementing energy conservation in housing, we conduct housing eco-point program supporting reconstruction, and also lower interest-rates by utilizing systems such as the securitization support project of the Japanese Housing Finance Agency. Also, we strive for the development and dissemination of designs and construction technology for energy-saving housing and buildings by holding courses for designers and construction technicians as well as supporting pioneering technological development of commercial businesses.

Furthermore, we are formulating supportive taxation measures in order to stimulate home improvements in energy-saving performance.

(2) Advancing the reduction of environmental strain from government facilities

Government facilities are being outfitted with consideration for the environment, in renovations to reduce environmental strain throughout the lifecycle of buildings. The Yokosuka local joint government building was constructed accordingly in 2012. In an effort to improve preexisting facilities, decrepit facility appliances are being replaced by those with high energy-saving capabilities, while we also provide technological support for facility management, for optimum operation and maintenance. We are also promoting the use of wood in government buildings; for example, the Yokohama Plant Protection Station Tsukuba farm was built by wooden construction and Yokosuka National Government Building was built utilizing a timber interior in 2012.

Graphic II-8-1-5 Examples of the use of wood in government buildings



Source) Left: Yokohama Plant Protection Station Tsukuba farm, office and laboratories
Right: Kobe Border Customs Sakai Branch Customs Office, office

(3) Countermeasures towards Global Warming in Sanitary Drainage

Based on the Kyoto Protocol Target Achievement Plan, the reduction of carbon monoxide is being advanced by the implementation of energy-saving measures such as high efficiency equipment, and with new energy measures such as the processing of raw sewage into solid fuel, the use of bio-gas, and the high temperature incineration of raw sewage.

(4) Implementation of small hydroelectric generation using rivers

As initiatives towards a low carbon society, the implementation of small hydroelectric generation by using rivers and the like, is being pushed forward. Specifically, irrigation permission procedures are being simplified and streamlined to promote the dissemination of small hydroelectric generation based on the River Act, while power generation equipment for the management dams, under the direct jurisdiction, are being implemented. In addition, we are working towards thorough use of unused energy by supporting the implementation of small power generation equipment in sediment control dams.

(5) Implementation of CO₂ sink measures through urban greening

Urban greenery is internationally recognized as green house gas sinks for “Re-vegetation Activities” based on the Kyoto Protocol. The Kyoto Protocol Target Achievement Plan also recognizes this activity as creating low carbon cities because of improvements to the thermal environment through mitigating urban heat island effects, as well the heightening of public awareness to its significance and effects. Based on the “Master Plan for Greenery,” devised by municipalities concerning overall greenery, the improvements to city parks, the greening of roads, rivers, ports, sewage treatment facilities, housing, government facilities and private property are being actively undertaken.

(6) Countermeasures towards global warming in urban district development

① Urban district development

Beginning with the extended utilization of energy, in order to promote pioneering urban environmental measures at regional and district levels for the realization of constructing low carbon cities, we are supporting the formulation of plans, coordination and model businesses.

② Urban development using environmentally friendly vehicles

In order to realize environmentally friendly urban transportation and promote the development of low carbon cities by utilizing environmentally friendly vehicles (especially electric buses, electric vehicles, and ultra lightweight vehicles), a guideline was created for the implementation of ultra lightweight vehicles and electric buses, and for the establishment of charging facilities in FY2012. Superb initiatives were put in effect to encourage the implementation of electric buses in other regions, and we established certification systems to allow ultra lightweight mobility to drive on public roadways. We developed the activities of local public bodies and businesses by supporting exceptional initiatives that take part in urban development.

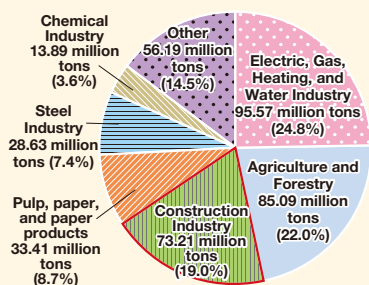
Section 2 Promoting the creation of a recycling society

1 Advancing recycling in construction

Construction waste accounts for approximately 20% of all industrial waste, 20% of final disposed amount, and 60% of all illegally discarded waste. Controlling the output of construction waste is a major task in the advancement of recycling. The total amount of construction waste produced in 2010 amounted to 73 million tons. Although the recycling rate for 2008 was 93.7%, better than the 92.2% of 2005, we must continue these activities in order to achieve high levels of recycling.

Raw sewage also accounts for 20% of all industrial waste, reaching approximately 72 million tons in 2010. We are developing recycling in order to reduce this amount.

Graphic II-8-2-1 Industrial waste produced by sector and recycle rate of construction byproducts



Source) Developed by the MLIT from: “Status on production and disposal of Industrial Waste” of the Ministry of the Environment

Subject materials	Index	Results from 2005	Results from 2008	Objectives for 2012
Asphalt, concrete clusters	Recycle rate (%)	98.6	98.4	98 or more
Concrete clusters		98.1	97.3	98 or more
Wood material derived from construction		68.2	80.3	77
Wood material derived from construction	Recycle and reduction* rate (%)	90.7	89.4	95 or more
Construction sewage		74.5	85.1	82
Construction mixed waste	Produced amount (ten thousand tons)	293	267 (9% decrease in comparison to 2005)	205 (30% decrease in comparison to 2005)
Total construction waste	Recycle and reduction* rate (%)	92.2	93.7	94
Construction generated soil	Efficient utilization rate (%)	80.1	78.6	87

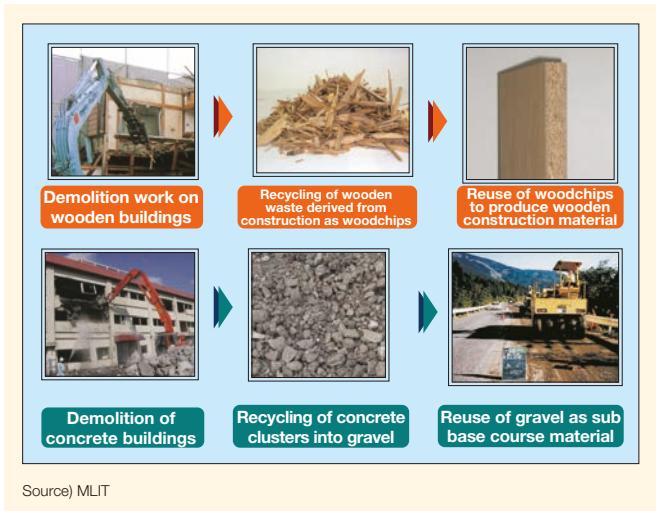
*Reduction refers to reducing the amount of waste through incineration, dehydration, or other processes.
Source) MLIT, “2008 Status Survey on Construction Byproducts

(1) Advancing recycling in construction

Based on the “Construction Material Recycling Act (Construction Recycling Law),” we are working to enforce proper measures through a simultaneous patrol throughout Japan.

In addition, we are conducting investigations and surveys needed for overcoming various challenges, such as the thorough dismantling and separation of plaster boards waste, as pointed out by the “Compilation on the Assessment and Investigation on the State of Enforcement of the Construction Recycling Scheme,” and are working to advance recycling in construction. The challenges encountered for recycling in construction includes: certain materials having a low recycling rate, attempts to curb the amount or enhance the “quality” of recycling being insufficient, and unlawful dumping related to construction remains common. In response, we are planning on raising awareness among the concerned personnel, strengthening cooperation, and the consolidated expansion of other environmental measures. We are promoting the “Construction Recycling Advancement Plan of 2008,” which contains the basic outlook for cultivating the construction recycling market based on creative activities of private enterprises.

Graphic II-8-2-2 Examples of Activities for Advancing Recycling in Construction



(2) Reducing raw sewage and promoting recycling

We are promoting the recycling of raw sewage (recycling rate of 78% in 2010), use of bio-gas produced by incinerating sewage for generating electricity and for fuel in cars that utilize natural gas, utilizing energy such as the solid fuel processing of raw sewage, and advancing recovery and utilization of phosphorus from sewage. Furthermore, we are proceeding with the Breakthrough by Dynamic Approach in Sewage High Technology Project (B-DASH Project) for developing innovative technology and systems for the effective use of sewage based resources.

Column

Utilization of Energy from Plant Based Waste Material in Cities

Upon the occurrence of the Great East Japan Earthquake in March 11, 2011, power outages occurred on a wide scale throughout the Tohoku and Kanto regions. Approximately 8.4 million households under the jurisdiction of the Tokyo Electric Power and Tohoku Electric Power Companies suffered power outages. Although over 80% was recovered 6 days after the occurrence of the earthquake, refugee life and rescue activities were affected during the outage.

In many cases around disaster sites, gymnasiums and plazas at city parks were utilized as living quarters and relief operation sites for victims who lost their homes due to the tsunami. In Fukushima, around 200 parks were utilized as evacuation sites or temporary relief housing 1 month after the earthquake. In light of these situations, we see the need to support smooth evacuation and relief operations by establishing systems in city parks with the ability to supply a consistent amount of energy during natural disasters.

To this end, we have directed focus to using energy produced from plant based waste materials derived from public parks in urban areas. By supplying energy to disaster prevention parks, we aim to create a low carbon, recycling society that is resistant to disaster while accommodating environmental issues and problems with the decreasing population. It is estimated that the amount of plant based waste materials produced by pruning and other maintenance of urban public parks throughout Japan reach around 2 million tons a year.

Although a portion of this amount is put to efficient use (utilization rate of pruned branches from parks in the Osaka prefecture: 29%, utilization rate of pruned branches from greenery in Hamamatsu city: 4%, utilization rate of pruned branches from parks and tree-lined streets in Matsumoto city: 14%), most of the waste is currently disposed by incineration. In addition, even if they are recycled into wood chips or for fertilization, there are still portions that are not put to effective use.

In contrast to lumber from thinning forests in mountainous regions, plant based waste produced in cities have the advantage of costing less and requiring less energy in movement and transportation. However, the amount that is produced greatly fluctuates depending on the season and poses difficulty in acquiring a consistent amount on a regular basis. This makes plans for energy utilization, such as power generation, rather difficult to achieve with the current circumstances.

In order to promote the utilization of energy from plant based waste materials, starting in 2012 the MLIT started demonstrative experiments (collecting plant based waste, experiments generating power, etc.) in model cities (Matsumoto city, Kita-Kyushu city) with power generation systems utilizing plant based waste derived from urban areas. We are analyzing the amount of waste produced, costs and methods for movement, and deliberating over topics such as the business profitability based on the results. We plan to continue demonstrative experiments through 2013 and establish a guideline for the implementation of this system.

Demonstrative experiments in model cities (collecting plant based waste and chip processing)



(Matsumoto city)
Source) MLIT



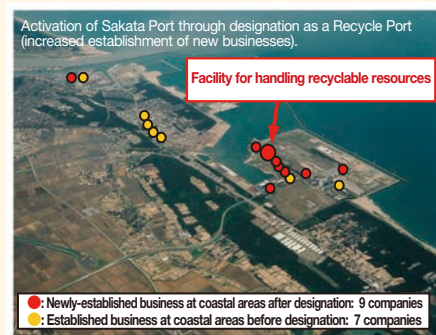
(Kita-Kyushu city)
Source) MLIT

2 Establishing a logistics system of recyclable resources

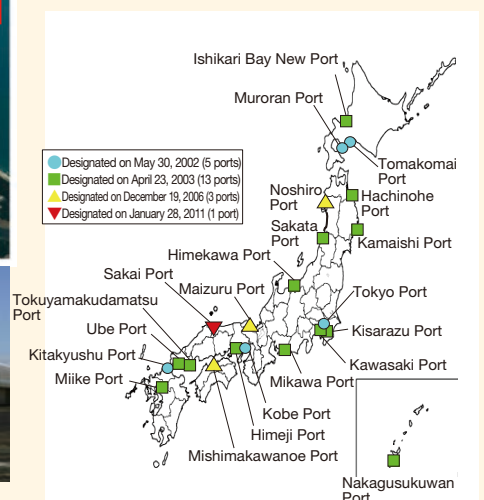
(1) Forming a marine-based logistics network for extended recycling

In order to support establishing a sound material-cycle society, we have designated 22 ports within the country as “Recycle Ports” (Integrated Logistics Center for Extended Recycling) as hubs for regional use of recyclable resources. At Recycle Ports, support has been provided including securing necessary port facilities like wharfs, providing subsidy for facilities handling recyclable resources, promoting public-private partnership, and improving enforcement of regulations to facilitate proper handling of recyclable resources at ports.

Graphic II-8-2-3 Designated Recycle Ports



Source) MLIT



(2) Ensuring systematic development of sea area waste disposal sites

Sea area waste disposal sites are developed in order to receive dredged sediment generated produced by development and management of port infrastructure, as well as domestic wastes that have difficulty in ensuring in-land disposal sites. In the Osaka Bay, in particular, regional waste disposal sites are developed based upon the Osaka Bay Phoenix Project, receiving domestic wastes from 168 municipalities under 6 prefectures in the region. In addition, based on the Super Phoenix Plan, sediment from construction/dismantling activities generated at the Greater Tokyo Area is transported by sea to various ports to be used for landfilling material.

3 Recycling vehicles and marine vessels

(1) Recycling vehicles

In accordance with the “Act on Recycling, et. of End-of-Life Vehicles (Act for automobile recycling),” a system for confirming that end-of-life vehicles are scrapped is being implemented. When deleting vehicle registration from the “Road Transportation Vehicle Law,” the scheme for returns in vehicle weight tax is also conducted, in order to promote the proper disposal of end-of-life vehicles and prevent illegal dumping.

(2) Recycling marine vessels

The recycling of large vessels (ship recycle)^{Note 1} has generally been conducted in developing nations such as Bangladesh and India where the frequent occurrence of human casualty accidents and marine pollution in the facilities continue to raise concern. In order to solve these issues, Japan lead discussions with the International Maritime Organization (IMO), which resulted in the adoption of the “2009 Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (tentative name) (Ship Recycling Convention).” This convention mandates the inspection and retention of proof documents for marine vessels and ship recycling facilities respectively, and also bans the use of asbestos or polychlorinated biphenyl (PCB) in newly built vessels. Various guidelines to supplement the implementation of this convention were formulated under the initiative of Japan and were all adopted in October 2012.

As for domestic measures, Japan is taking the global lead in efforts towards implementing an environmentally friendly ship recycling system for advanced nations. We are constructing a project operation scheme based on the market characteristics and deliberating a stable and continuous method of business operation.

On other fronts, because privately owned pleasure boats are mostly made of fiber reinforced plastic (FRP), which is difficult to dispose, there has been a demand for a waste processing route for proper disposal. In response, we undertook activities in building a processing route, as well as developing recycling technologies for FRP boats. As a result, approximately 700 FRP vessels are properly recycled yearly under the leadership of the Japan Boating Industry Association throughout Japan since 2005.

4 Promoting material procurement that contributes to reducing the environmental load

(1) Efforts for Green Procurement^{Note 2}

In light of partial revisions to the basic government policies, based on the “Law Concerning the Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities (Law on Promoting Green Purchasing),” the “Basic Policy on Promoting Green Procurement” was adopted. Based on this policy, we are actively promoting procurement of eco-friendly goods and services for building materials, construction machinery, method of construction and objectives in public construction work.

Note 1 Marine vessels that have reached the end of their service life are scrapped and mostly reused as steel material.

Note 2 In this section, the procurement of eco-friendly goods etc., specified by article 2 in the “Law on Promoting Green Purchasing” is referred to as green procurement.

(2) Promoting the use of wooden building materials

Because wood is an environmentally friendly building material due to reasons such as requiring less energy to process in comparison to other materials, and long-term utilization in various applications contributes to preventing global warming, we strive to encourage the utilization of wooden materials in public construction.

Regarding the procurement policy based on “Green Procurement,” we are actively promoting the utilization of wood derived from forest thinning, as well as wooden buildings that use regional wood materials through measures such as the formulation of systems for building wooden structures and cultivating managers for them.

Based on “the Act for Promotion of Use of Wood in Public Buildings, etc.,” the MLIT drew up the “Plan for Promotion of Use of Wood in Public Buildings, etc.” in May of 2011, and in March of 2013, we published the “State of Implementation of Measures for Promoting the Utilization of Wooden Materials in Public Buildings” under joint names with the Ministry of Agriculture, Forestry and Fisheries. In addition, we compiled the technological items related to design for fireproof wooden buildings, where progress in construction is halted due to the advanced technical difficulties, and formulated the “Design Guideline for Fireproof wooden buildings in Government Buildings.” Furthermore, we are providing support for construction to large-scale wooden buildings where pioneering designs and technologies are being implemented.

Section 3 National land development that revives and preserves the natural environment

1 Initiatives for preserving biodiversity

As efforts towards the Strategic Plan 2011 to 2020 (objective for the Aichi prefecture), adopted at the COP10 held in Nagoya city in Aichi prefecture in October of 2010, we are currently advancing activities for its achievement. Furthermore, the “National Biodiversity Strategy 2012 to 2020” was formulated in September of 2012, and we have decided to continue the advancement in activities for preserving, reviving and creating animal habitats in rivers, urban green lands, coastal regions and harbors.

In addition, as reference material for drawing up “Master Plan regarding Afforestation, Greening, and the Preservation of Forests and Other Green Spaces” (Master Plan for Greenery”), the master plan formulated by municipalities concerning overall greenery, we established the “Technical Considerations related to Conservation of Biodiversity in regards to the Master Plan for Parks and Open Spaces” in October of 2011. We are working to promote activities by local public organizations for the conservation of biodiversity in urban areas.

2 Creating rich and beautiful river environments

(1) Creating and conserving a healthy river environment

① Creating a rich river environment and stimulating revival

In river development, based on the “Basic Guideline for Rich River Development (established October 2008),” we work for the conservation and restoration of animal habitats and diverse river scenery, while concurrently sustaining safety over flood control.

We are also promoting the restoration of wetlands through nature restoration projects and bettering the environment for fish climbing up or descending down river by improving fish ladders. By advancing these various activities through cooperation, we form^{Note} an ecological network and promote the conservation and revival of the river basin ecosystem.

Moreover, to effectively proceed with these activities, we are joining efforts with educated experts and various institutions, as well as utilizing research findings of government inspections of river areas and the Aqua Restoration Research Center, which has the largest experimental waterway in the world.

Note Activity to restore a rich environment by conservation and revival of natural areas and connecting them, thus acquiring migration paths for animals and reviving natural functions.

② Implementing countermeasures for foreign species in rivers

One of the greatest threats to preserving biodiversity is the presence of foreign species. These species continue to spread their habitat throughout Japan, posing problems to the native ecosystem. As a countermeasure, we have circulated information such as the “Revised Version: Examples and Concept of Countermeasures in Rivers for Foreign Species (February 2011)” and are implementing measures against foreign species in various locations.

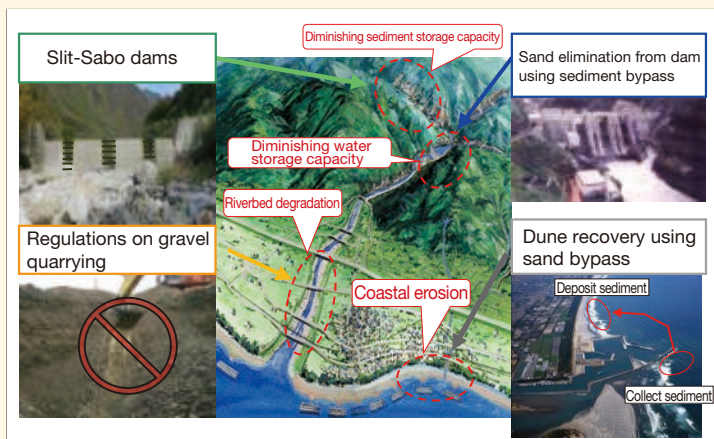
(2) Initiatives to recover the water supply in rivers

In order to preserve a healthy river environment, it is essential to sustain a rich supply of water. For this reason, we have specified the required amount of water in the basic policies over river development, based on the habitat of plants and animals, scenery, and water quality. In addition to working to sustain the supply, we are proceeding with activities for clean river recovery in recession areas down the stream from dams of hydroelectric power plants. Meanwhile, in order to preserve and improve river environment downstream of dams, we are implementing flexible dam operation and tests for flexible operation (conducted in 18 dams throughout Japan as of 2012) to efficiently utilize a portion of the flood control capacity without hindering flood regulation. Furthermore, we work to restore the water supply of rivers in urban areas, where the average amount of naturally flowing water has diminished, by pumping treated water from sewage plants.

(3) Promoting activities in the comprehensive management of sedimentation from mountains to coastal areas

Concerned that climate change will accelerate problems such as diminishing sand supplies to the coast, variation in river environments caused by changes in sedimentary flow, and coastal erosion caused by changes in littoral drift, in recent years, relevant institutions are working in cooperation to comprehensively control sediment flowing down from mountains to coastal areas. Specifically, we are strengthening cooperation with relevant institutions, by drawing up policies aimed at project collaboration in order to respond to problems caused by sedimentary flow from mountain streams, dams, rivers, and coast.

Graphic II-8-3-1 Initiatives in the comprehensive management over sediment



Source) MLIT

(4) Environmental education on rivers

As natural environments close to communities, recently, rivers host a variety of activities such as environmental studies and natural experience activities. In addition, we are promoting the projects and disseminating of information so children can safely learn and play by riversides. Because there are hidden dangers, and proper knowledge is essential for safe activity, we cooperate with the NPO “River Activities Council (RAC),” which citizens’ groups played a central role in establishing, to promote the cultivation of river administrators. Moreover, to prevent incidents caused by sudden swells in rivers, we are implementing measures by referring to the “Action Plan to Prevent Water Accidents caused by Sudden Flooding” established in 2007, and the reports from the “WG on water accidents prevention in small and medium size rivers” which was established in response to the occurrence of the Toga River flash flood in the Hyogo prefecture in July 2008.

○ Children's Riverside Rediscovery Project

With the cooperation of citizens' groups, educators, and river administrators, rivers are registered as Children's Riversides and receive various means of support from the Center for Supporting Children's Riverside Activities. 293 locations are registered as the end of March 2012.

○ Riverside Fun School Project

Utilization is encouraged for riversides that are registered as Children's Riversides and undergo riverside improvements required for enhancing experiential activities. 280 locations are registered as the end of March 2012.

○ Aquatic Organism Survey

This activity is conducted to raise interest in aquatic environment by searching creatures that live in rivers. In 2011, 55,772 people participated and 55% judged the 2,333 investigated sites as "Clean Water."

3 Preserving and improving coastal environments

Because we must preserve animal habitats, care for scenery, and sustain appropriate usage of beaches, while protecting the coast from high tides, tsunamis, and billows, we are proceeding with maintenance and conservation that balances between "defense," "environment," and "usage."

Due to floating and beached waste originating from inland and foreign countries, in recent years, the diminishing coastal functions and deterioration of the environment, scenery, and ecosystem, and the effects on safe navigation for ships and the fishing industry have become severe. In response, based on the "the Act for the Promotion of the disposal of Coastal Drifting Debris," we plan to implement effective measures for floating and beached waste in close cooperation with relevant institution in the future.

In addition, we are advancing the "Emergency Large-Scale Disposal Project for Beached Waste and Etc. related to Disaster," where personnel from "Multiple Beaches" from a wide area work to integrally and efficiently dispose waste, for emergency disposal of large amounts of beached waste, which disrupt the functions of coastal protection facilities.

4 Greening port and harbor administration

(1) Basic direction of future port and harbor environment policies

In order for ports and harbors in Japan to uphold their position as grounds for logistics, industry and living, and sustain continual growth, they must recover as much degraded or lost nature as they can, and incorporate environmental conservation in various port functions. For this reason, we are working towards "greening port administration," which involves the two parts of ① port and harbor development and ② utilization, and conservation, revival, and creation of environments in to one consolidated subject.

Graphic II-8-3-2 "Greening port administration"



Source) Ministry of Land, Infrastructure, Transportation and Tourism

(2) Actively preserving, reviving, and creating a healthy environment

We strive to efficiently utilize dredged soil derived from harbor maintenance, by usage in creating tidal flats, sand capping, back-filling deeply excavated sites, and disseminating port facilities that can coexist with organisms. After the projects have been started, we will continuously monitor the status after maintenance by implementing adaptable management methods. Various organizations such as administrative agencies and research institutes will register environmental data and construct a sharable database on the ocean environment; gathering, accumulating, analyzing and publishing data. Together, we actively work to preserve, revive and create a rich natural environment in coastal areas.

In addition, the “Seaside Nature School,” which utilizes the areas preserved, revived or created, is being held in various locations throughout Japan as an effort to create opportunities for learning the importance of the natural environment.

(3) Initiatives in measures for preventing illegal boat parking

Because illegally parked boats affect the navigation and anchorage of vessels, coastal recreation, and fishing activities, as well as raising concerns over secondary damages from tsunamis, regulatory measures are being implemented for the specification of parking prohibited areas for boat parking and the enhancement of mooring capabilities for small vessels.

As illegally parked boats raise different problems depending on the water space concerned, we have established a platform for discussion between water space management and relevant personnel in the Regional Development Bureau and the District Transport Bureau.

5 Greening roads and promoting environmental measures

Greening roads is crucial for providing a comfortable atmosphere to those who use them, creating favorable scenery that matches the surrounding scenery, and as countermeasures against heat island effects. Due to these reasons, beginning with the green shade road projects for creating bowers in the road atmosphere, we are promoting improvements to roadside trees and sidewalk greenery, and cooperating with roadside communities in operation and maintenance. In addition, we strive to preserve and revive the environment by avoiding areas that are valuable natural environments, for road construction from planning stages, or try to minimize the effects or implement alternative measures if it cannot be avoided.

Example of green shade roads (Miyazaki prefecture)



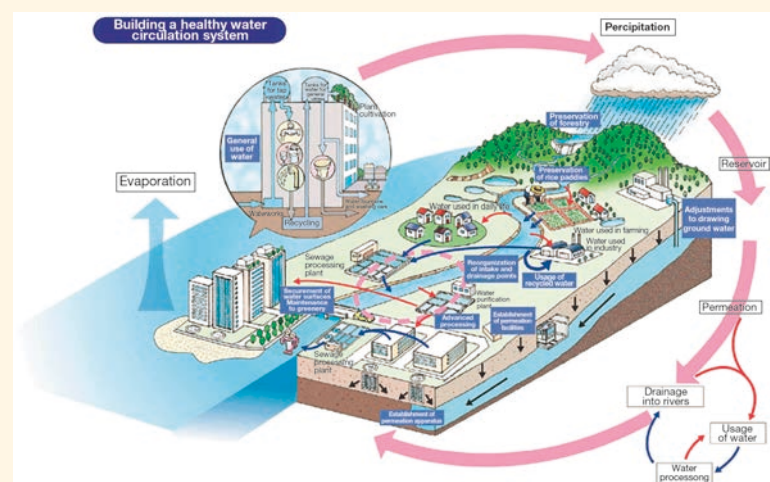
Source) MLIT

Section 4 Building a healthy water circulation system

1 Measures in building a healthy water circulation system in cooperation with ministries and agencies involving water

The liaison conferences for involved ministries and agencies in building water circulation systems has published the “Initiatives for Planning a Healthy Water Circulation System,” and involved ministries and agencies are working together to provide various means of support to promote activities in communities.

Graphic II-8-4-1 Building a healthy water circulation system



2 Initiatives in improving the water environment

(1) Proceeding with water purification

For rivers and lakes with serious deterioration in water quality, we are striving to acquire clean water through water purification measures such as clean water transmission, dredging sediment, and purification by vegetation in places such as Kasumigaura (Ibaraki prefecture), Shinji Lake, and Nakaumi Lake (Simane and Tottori prefectures).

In the rivers and lakes where water conditions have especially deteriorated, local municipalities, river administration and sewage work administration are working together to formulate and implement the “The Second Urgent Action Strategy for Water Environment Improvement (Clear Stream Renaissance II)” (34 locations selected throughout Japan).

Graphic II-8-4-2 Clear Stream Renaissance II



(2) Surveys on water quality and measures against water quality hazards

Water quality surveys of rivers, lakes, dams, and water reservoirs are crucial to conserving and reviving aquatic environments. In 2011, MLIT surveyed 1,091 sites in 109 river-systems throughout Japan.

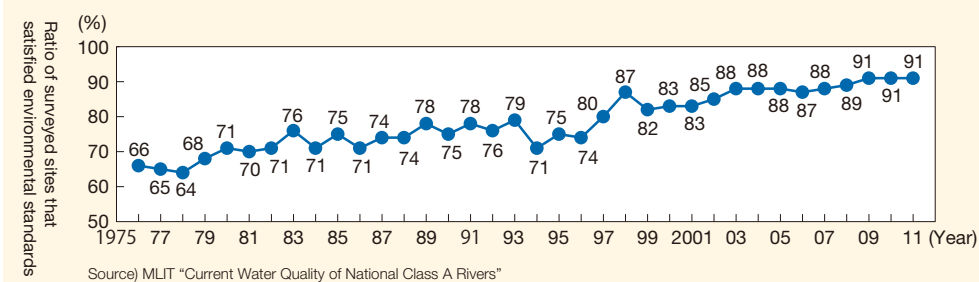
MLIT also formulates maps based on water quality surveys and investigate aquatic organisms in cooperation with local citizens. In addition, MLIT conducts surveys on rivers based on a new water quality index, which comprehensively evaluates the quality of water from various standpoints; the latest result shows that approximately 22% of surveyed sites (59 out of 270) were judged as “clean rivers desirable for swimming” (FY 2011).

On the other hand, 1,244 cases of water quality hazards such as leakage of oils or chemicals occurred in class A river

systems in 2011. MLIT is striving to prevent these hazards and quickly implement measures upon occurrence. As for water pollution control, the Liaison Council for Prevention of Water Pollution, consisting of river administration and relevant administrative authorities, was set up in all 109 water systems in Japan to quickly report and communicate the occurrence of water quality hazards, and for the containment of hazards, such as installing oil fences.

- From a national perspective, surveyed sites that satisfied the levels of BOD (Biological Oxygen Demand) or COD (Chemical Oxygen Demand) of environmental standards amounted to 91% in 2011, the highest percentage for 3 years in a row since this survey was started.
- Of surveyed sites in the rivers, 95% of the sites had good water, in which salmon and sweetfish can thrive (≤ 3.0 mg/L of BOD).
- As for items in environmental standards related to protecting the health of people (27 items including arsenic), 99% of the sites satisfied environmental standards.

Graphic II-8-4-3 Ratio of surveyed sites that satisfied BOD or COD levels of environmental standards



(3) Improving the water environment of enclosed coastal seas

Regarding the enclosed coastal seas of the Tokyo Bay, Ise Bay, Osaka Bay, and the Inland Sea of Japan, because of the large amounts of organic pollutants and chemicals such as nitrogen and phosphate draining from land, and the loss of tidal flats and seaweed meadows, the fishing industry has suffered damages from the occurrence of red and blue tides.

In addition, floating waste causes environmental deterioration and prevents ships from usual navigation.

To resolve the current state, we advance activities to revive beautiful oceans by ① sludge dredging, sand capping, and back-filling deeply excavated sites to improve the substratum, ② creating habitats for organisms by reviving tidal flats and seaweed meadows and disseminating port facilities that can coexist with organisms, ③ removing floating waste and oils by using sea environment improvement vessels, and ④ reducing the amount of pollutants released into the ocean by improving sewage treatment facilities.

(4) Stimulating the sewage maintenance to improve the water environment

We will appropriately formulate and review the comprehensive basin-wide planning of sewerage systems, and promote high temperature incineration to remove nitrogen and phosphates which contribute to the eutrophication of enclosed bodies of water. In addition, we are working for early advancement in improving water quality and stratified advanced water treatment by partially renovating equipment and facilities in treatment plants that have not yet reached their scheduled renewal period.

As for the combined sewerage system, we plan to complete implementation in small to medium cities by the end of FY2013 and in large cities by the end of FY2023 through controlling the amount of water and the frequency at which untreated water is released in to streams during heavy rains.

(5) Recovery of waterways according to the needs of communities

In recent years, waterways are being purified and improved in water amenity by transferring clean water into them. In addition, the need for protecting and preserving the animal habitats and cultural heritage are increasing. For this reason, based on the "Guideline for Handling the Authorization to Utilize Water Supplies related to Ambient Water,"^{Note} we are

Note Ambient water is water used for sustaining and improving water quality, water amenity spaces, living environment such as landscape, or the natural environment.

allowing a set amount of water to be usable throughout the year. We have clarified the standards of authorization and are working to revive “urban clear streams.”

3 Cultivating water and using it efficiently

(1) Stable supply of water resources

In order to secure stability in the utilization of water, there must be various policies corresponding to the situation of communities from both standpoints of supply and demand. Specifically, in the facet of demand, we must enhance the recovery and reuse of water, and increase awareness for conserving water. In supply, we must build and improve water resource development facilities such as dams, implement countermeasures for aging facilities related water resources, develop crisis management measures, and increase the number of water resources by utilizing rain water and recycled water. In addition, in order to preserve and vitalize water resources while preserving and properly utilizing ground water, we are administering improvements to living environments and industrial infrastructures based on the “Special Measures for Water Source Area Act.”

Furthermore, as measures against risks posed by climate change, we strive to construct a healthy water system and realize a society that can continually utilize water. Institutions assigned to respective water basins of a water system cooperate and coordinate with each other to proceed with initiatives towards comprehensively managing water resources by collectively analyzing aspects such as the amount and quality of water, and the surface and ground water, during normal times and during times of emergency.

(2) Efficient use of water resources

① Initiatives towards expanding the utilization of recycled water derived from sewage

Stable amounts of recycled water can be secured and is a valuable water resource in urban areas. Of all the treated sewage, approximately 1.4% undergoes treatment according to purpose, and recycled water is used in streams, sustaining water levels of rivers and the sanitation of toilets. We aim to further expand the utilization of recycled water.

② Promoting the utilization of rain water

In order to efficiently utilize water resources, initiatives are being promoted to treat and use rain water and waste water from facilities for sanitation of toilets and sprinklers. There are approximately 2,900 facilities utilizing treated water as of 2010, and they use over 65 million m³ a year. In order to continue promoting the utilization of rain water, we are gaining understanding regarding actual conditions, including examples of facilities using rain water, the considerations for using rain water, and share this information with users.

(3) Securing safe and delicious water

Although Japan is one of the few countries in the world where the water supply is so developed that water can be drunk directly from the faucet, in recent years, the public demand for safe and delicious water is further increasing. Because of this, we work to secure delicious water, and avoid or reduce the risks related to water quality. In order to prevent offensive smells or taste, and the leakage of hazardous substances due to the deterioration of water quality, water from branch streams are bypassed to sluice gates of treatment plants located downstream, water sources are purified at dams and rivers, dissemination of sanitary drainage is being developed, implementation of advanced treatment is being promoted, and combined sewage systems are undergoing improvement measures.

(4) Promoting measures concerning the permeation of rainwater

Due to the spread of impervious areas in recent years by urban development of drainage basins, more rain water flows into rivers in short periods of time instead of being absorbed into the ground. In addition to reducing flood damage from heavy rains by absorbing as much rain water as possible into the ground, improvement to rainwater storage penetration facilities are being promoted through tax measures, for cultivating ground water, contributing to the revival of springs, and building a healthy water cycle system.

(5) Promoting measures concerning groundwater

As a result of excessive utilization of groundwater for industrial purposes during the period of high economic growth, adverse affects emerged in various locations such as land depression and salination of water supplies. In the Nobe plain, Chikugo and Saga plains, and the Northern parts of the Kanto plain, where land depressions have occurred, activities for preserving groundwater and promoting proper usage are being conducted based on the Guideline on Measures for Prevention of Ground Subsidence.

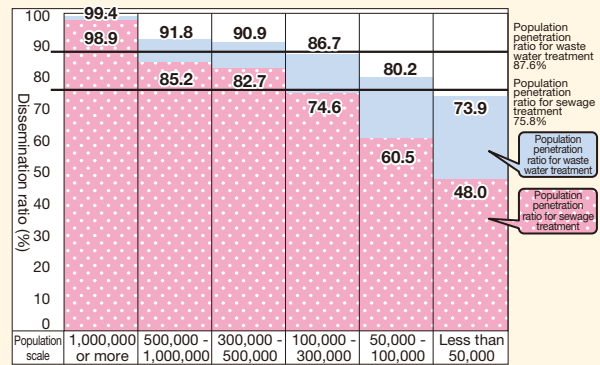
4 Realizing amenity by promoting improvements to sanitary drainage

Sewage is the indispensable social foundation for the development of healthy cities, treating waste, and preventing floods. In recent years, new demands are being made of sanitary drainage, including forming a low carbon, recycling society and a healthy water circulation system.

(1) Dissemination of sewage processing with sanitary drainage

Although the dissemination of sewage treatment plants reached around 88% (dissemination of sanitary drainage systems of around 76%) of Japan as of 2011 (total of 45 prefectures, excluding Iwate and Fukushima due to effects from the Great East Japan Earthquake), there is a large gap between regions. In particular, the dissemination of sewage treatment plants in small to medium communities with populations of less than 50,000 people remain low, only reaching a ratio of approximately 74% (dissemination of sewage systems approximately 48%). Focusing on improvement in areas with high population density, the advancement of efficient development in accordance to condition of communities and the rectification of the gap between communities are seen as being of the utmost importance for developing sewage systems in the future.

Graphic II-8-4-4 Dissemination ratio of population of with treated tap water by city

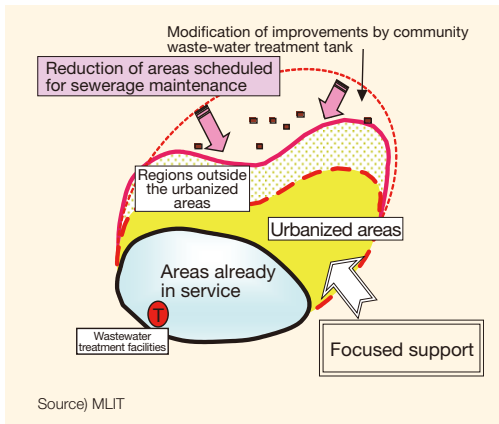


(Note) Due to the Great East Japan Earthquake, the prefectures of Iwate and Fukushima are excluded from evaluation. The collected data is of the 45 prefectures excluding the two mentioned.
 Source) Developed by the MLIT based on documents provided by the MLIT, Ministry of Environment, and Ministry of Agriculture, Forestry and Fisheries

① Cooperation between businesses for efficient maintenance of sewage treatment facilities

In regards to the maintenance of sewage treatment facilities, individual disposal by using septic tanks are economical in areas where households are widely distributed throughout a region, while the collective disposal with sewerage systems and drainage facilities for agricultural communities become more economical as the population density rises. For this reason, each prefecture has established a “Prefectural Plan,” a compiled maintenance plan over sewerage treatment which reflects considerations over regional characteristics such as the economic efficiency and importance over protecting water quality. In light of the declining population in recent years, the prefectural plans are undergoing urgent revision to attain increased efficiency in the maintenance of sewage treatment facilities. In addition, efficient means of maintenance are also being actively promoted through the implementation of cooperative schemes between other waste water treatment facilities such as cross-jurisdictional waste water treatment.

Graphic II-8-4-5 Revision of sewerage plans and focused improvement



Source) MLIT

② Sewerage quick project

In light of the declining population and the strained state of public finances, this project aims for the widespread implementation of new methods for swift and mobile maintenance, not constrained by past technological standards, low in cost, and corresponding to circumstances of regions with the cooperation local citizens, while a committee composed of experts inspect them for aspects such as competence. Manuals are being drafted to assist in the utilization of six technologies, such as the “plant manufactured small-scale waste-water treatment facilities (catalytic oxidation method),” which were acknowledged for their effectiveness in field tests that took place in 14 municipalities up to 2012. Other technologies are also under inspection and evaluation for their utilization throughout Japan.

Graphic II-8-4-6

Example of implementing the sewerage quick project (small-scale waste-water treatment facility in Ninohe city, Iwate prefecture)



Source) MLIT

(2) Attaining durability in sewerage projects

① Proper management over already existent facilities

The proper operation, maintenance, reconstruction, and renewal over sanitary drainage systems, which grow with the development of sewerage facilities (approximately 440 thousand km of pipe extensions and approximately 2.2 thousand processing plants), are extremely important. Neglecting deterioration poses the risk of causing grave repercussions in daily life and socioeconomic activities. Although most were small in scale, cave-ins on roads caused by deteriorated piping and corrosion from hydrogen sulfide occurred in approximately 4,700 locations in 2011. In order to maintain and improve the functions of sewerage in the future, and minimize or equalize necessary costs, we must promote the implementation of facility management that practices preventative maintenance. Therefore, in addition to deliberating over the implementation of efficient means for inspecting piping and the comprehensive consignment of management to private sectors, systematic reconstruction, including the enhancement of earthquake resistant capabilities and measures for prolonging structural life, is being undertaken.

② Reinforcement of business infrastructure

In the operation of sewerage works, although it is a fundamental rule to cover costs (excluding portions covered by public expense) for treating waste water with money acquired from usage fees, the initial establishment requires a lump sum of funds. Due to the business characteristic in which income begins to stabilize as sewerage systems develop, there are cases where funds fall short during construction. Therefore, with the “Guide for restoring financial health in sewerage works” we are pushing initiatives in each municipality for the restoration of financial health in sewerage works.

③ Consigning facility management to private sectors and acquiring technical capabilities

In regards to operation and maintenance of waste water treatment facilities, initiatives such as environmental improvements are being conducted to facilitate furthering the comprehensive consignment of management.^{Note} Based on demands from local public organizations, the Japan Sewage Works Agency is provides technical support for constructing sewerage facilities, as well as for optimizing their operation and maintenance, and cultivating technical experts of local public organizations while developing new technology.

(3) Reinvigorating communities through sewerage

The proper treatment of waste-water through improvements in sewerage, and the preservation or creation of healthy water environments, stimulates regional settlement and promotion of tourism and industry. In addition, by creating river fronts using recycled water from advanced waste water treatment, stimulating regional activities through the operation

Note A method of facility management that reflects original ideas of private contractors by consigning details of operation methods in order to optimize operation while charging the responsibility to secure a specified level of capabilities such as sustaining the quality of released water from to optimize operation.

and management of water amenity spaces by citizens, utilizing space above waste-water treatment facilities, transferring sewage heat for usage as district heating, utilization of bio-gas as energy and efficiently using recycled resources derived from sewage, sewerage contributes to regional vitalization in numerous facets.

(4) Promoting environmental education in the field of sewerage

Working groups, consisting of elementary school teachers and sewerage administration representatives, created teacher edition textbooks that were well-suited for classroom use in sewerage education. These educational materials on sewerage are distributed on the “Junkan No Michi Geisuidou Environmental Education Portal Site”^{Note 1} so that teachers can access them freely. Additionally, subsidies are granted to each elementary and middle schools for supporting environmental education on sewerage.

Graphic II-8-4-7 Environmental Education in the field of sewerage

Activities for environmental education on sewerage at the Fukuoka Primary School Attached to Fukuoka University of Education



Source) MLIT

Section 5 Protecting the marine environment

(1) Control policies over large scale oil pollution

In order to eliminate the substandard vessels (a major factor for large scale oil pollution), Japan actively participates in international initiatives, such as the formulation of the international shipping database (EQUASIS), while also strengthening Port State Control (PSC), which checks if vessels meet standards, by conducting on-site inspection of vessels that enter Japanese ports. As for systems for inspecting if flag state governments are fulfilling their duties in monitoring and supervising ships from their own country, an arbitrary system proposed by Japan was authorized for establishment in 2005 by the IMO Convention. However, in light of progress in initiatives, the system is now scheduled to be mandatory by FY2015. In order to enhance the effectiveness of inspections, Japan will participate in discussions in reviewing the manner of operation.

In addition, as countermeasures for occurrences of large scale oil and HNS pollution in and around the Sea of Japan, Japan works to strengthen international cooperation and collaborative systems by establishing the “NOWPAP Regional Oil and HNS Spill Contingency Plan” through the “Northwest Pacific Action Plan (NOWPAP),” the framework for joint efforts among Japan, China, Korea and Russia for protecting the marine environment. As for large scale oil spillages that occur in the sea areas surrounding Japan, measures have been established for prompt and precise response through the utilization of large dredging and oil skimming vessel.

Moreover, the pollution by oil and garbage discharged from ships is regulated by the MARPOL 73/78.^{Note 2} The regulation on discharge of garbage during normal operation of ships was further reinforced in January 2013 by the amendment on annexes of the protocol. In order to attain properly receive oil and garbage from ships at ports and harbors, Japan provides support including tax policies for developing reception facilities for waste oil and developed the tentative “Guidelines for Port Authorities in Reception of Garbage from Ships.”

Note 1 <http://www.jswa.jp/kankyo-kyoiku/index.html>

Note 2 Protocol of 1978 relating to the International Convention for Prevention of pollution from Ships, 1973

(2) Control measures on air pollution for ships

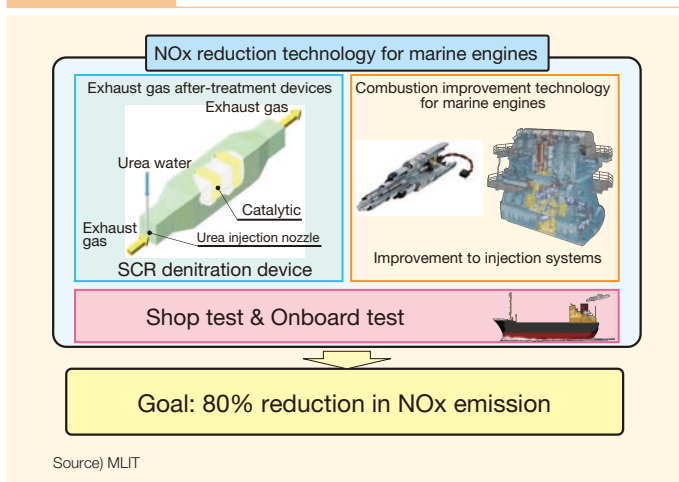
Ships have larger transportation capability from the viewpoint of energy efficiency, but these might emit, to a certain extent, quantity of nitrogen oxides (NOx) which is regulated for preventing air pollution from the ships. On the other hand, since ships may navigate anywhere, it is essential to develop and apply international regulations in order to ensure a level playing field in the global market. Taking into the characteristic, Japan amended “the Law concerning Marine Pollution, Etc., and the Prevention of Marine Accidents” in accordance with the amendments to the MARPOL 73/78 in order to enforce domestically the regulations related to the NOx emissions from ships in July 2010. In accordance with these regulations, the NOx emissions from marine engines (diesel engines) are subject to the survey and ships are also subject to the periodic surveys. In parallel, Japan continues contributing further to ongoing discussions on the issues at the IMO.

In parallel with the development of international regulations, Japan, as one of the world’s leading engine manufacturing countries, has promoted research and development projects including the technical development for exhaust gas after-treatment devices that significantly reduced NOx emissions and improvements of engine combustion technologies, for environmentally friendly marine diesel engines to contribute to preserving marine environment. As a result, Japan achieved the objective of reducing NOx emissions by 80%. In future, Japan contributes to the development of relevant guidelines at the IMO, performing tests related to evaluating and authorizing after treatment device for exhaust gas.

(3) Responding to issues with invasive aquatic species carried by marine ships

Aquatic species and organisms may be transferred via ships’ ballast water^{Note} or adhering to their hull from their original habitat area to other locations. This concern was expressed as possible negative impact on ecosystems in along with shipping navigation routes. To this end, the IMO adopted the International Convention for the Control and Management of Ships’ Ballast Water and Sediments in 2004, and the Guidelines for the Control and Management of Ships’ Biofouling to Minimize the Transfer of Invasive Aquatic Species in 2011. The MLIT has actively contributed to the discussions at the IMO for the coming enforcement of the convention and further improvements to guidelines.

Graphic II-8-5-1 The development of environmentally friendly marine diesel engines



Section 6 Improving living environments by preventing atmospheric and noise pollution

1 Policies for environmental issues related to road traffic

(1) Measures for individual vehicles

① Reinforcing exhaust regulations

For exhaust measures of new vehicles, seeking to further reduce nitrogen oxides and particulate matter emitted by vehicles, Japan established the most stringent regulations among global standards (post-new long-term regulation) in 2008, and began its consequent enforcement beginning in October of 2009. In addition, test methods based on uniform domestic standards for special and two-wheeled vehicles were implemented in 2010.

Meanwhile, exhaust measures for in-use vehicles (vehicles already in usage) such as those based on the “Amendment

Note Water taken up to ship’s tanks as weight to stabilize the ship’s position, during offloading cargoes as well as navigations, often to compensate for the lack of cargo.

Act on Reduction of Total Amount of Nitrogen Dioxide and Particulate Matters Originating from Automobiles in Designated Areas (Automobile NOx PM Law)” are being implemented; Japan is working to bolster exhaust measures.

② Development and practical application of next generation heavy vehicles

In order to stimulate the development and practical use of next generation vehicles, Japan is preparing environments for their dissemination. The government, industry, and academia are collaborating in their efforts for conducting demonstrative driving tests and vehicle development regarding high efficiency hybrid trucks, next generation bio-diesel engines, electric or plug-in hybrid trucks, and high performance electric buses, also formulating technical policies on safety and environmental conservation.

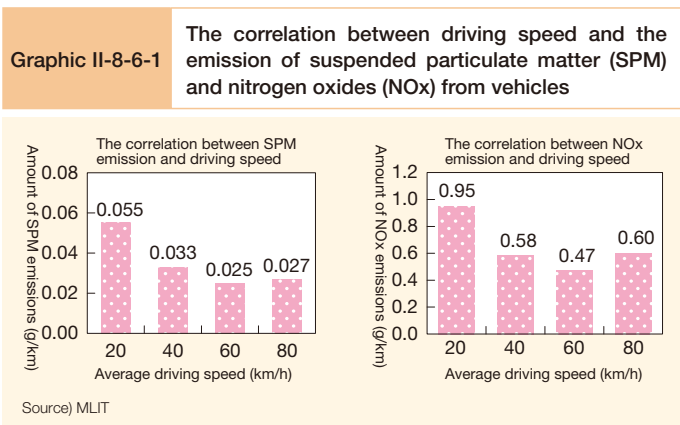
(2) Facilitating traffic flow

① Policies on air quality

Due to the increase in emission of particulate matter (PM) and nitrogen oxides from vehicles from decreased driving speed and from frequent stop-and-go driving, we are looking for ways to improve roadside driving, and policies for facilitating traffic flow are being implemented, such as the maintenance of highway networks, preventative measures against bottleneck traffic, and schemes in traffic demand management (TDM).

② Countermeasures for noise pollution

Japan is proceeding with the lamination of low-noise pavement, installation of noise barriers, and maintenance for environmental roadside facilities. Based on the “Law for the Improvement of Areas along Trunk Roads,” in addition to preventative measures for issues caused by traffic noise, financial assistance is being provided for buffer buildings and noise insulation work for housing in construction projects for areas alongside roads.



2 Environmental measures for airports and surrounding areas

The most effective means of curbing aircraft noise is the implementation of low-noise equipment. In comparison to the past DC8, the current B767 only produces 80dB (A)^{Note} of noise which has an approximately 90% smaller range of noise impact. However, even if low noise equipment is implemented, areas that are affected by noise impact require measures such as noise insulation work and relocation compensation projects. Most of the sound insulation work for housing, excluding continued maintenance, has been completed. Although the issues related to aircraft noise are progressing towards improvement and noise control zones in each airport are being sequentially reviewed, further measures are needed to reduce noise pollution in the future in order to promote harmonious development around airports and surrounding areas.

3 Control policies for railway noise

In policies to control noise created by Shinkansen, to satisfy environmental standards, Railway company have implemented sound source control measures such as installing and heightening noise barriers, installing pantograph covers, and conducting corrective railway grinding to eliminate the cause of noise itself. As for the construction of new railways for Shinkansen, for regions where the measures mentioned are difficult to implement, Japan is providing financial aid for sound insulation work in already existence housing.

As for noise control measures for existing lines, each railway company is instructed to lower noise levels below a fixed value when constructing new railways and renovating already existing railways more than before in large-scale

Note The noise (sound pressure) level weighed by A-frequency (frequency adjustments to evaluate sounds close to that of human senses, because the sensitivity of human ears differ depending on frequency).

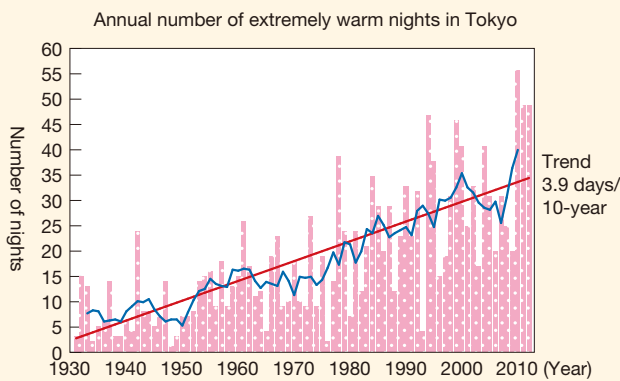
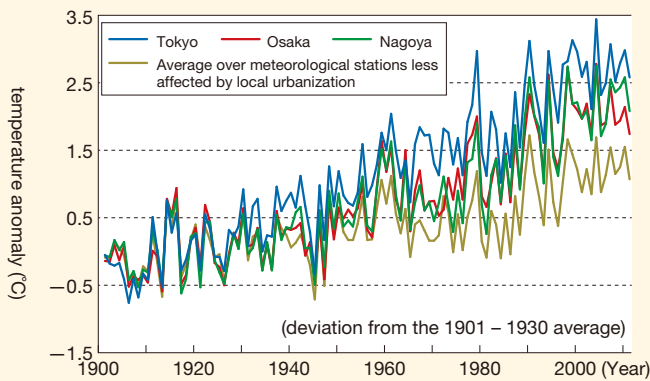
improvement projects, based on the “Guidelines for Noise Abatement Measures in the Construction of New Lines and Large-scale Improvement of Conventional Railways.”

4 Countermeasures against urban heat islands

Heat island effect refers to the phenomenon where a metropolitan area is significantly warmer than its surrounding rural areas. While the global temperature has elevated around 0.7°C in the last century, Japanese metropolitan areas have seen elevations of around 2 to 3°C, indicating the significant progression in heat island phenomena compared to the global warming trends. The main cause of this phenomenon is said to be increases in artificial heat from air-conditioning, the reduction of greenery and water surface, and the proliferation of houses and buildings.

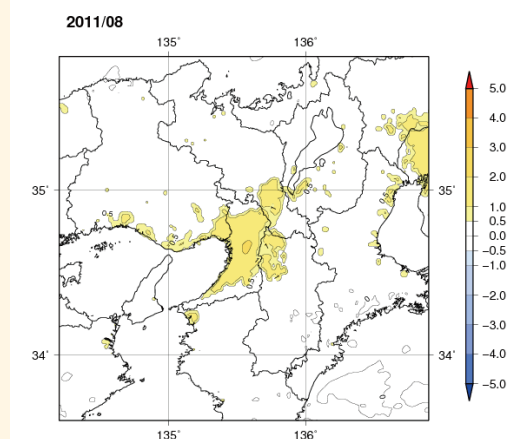
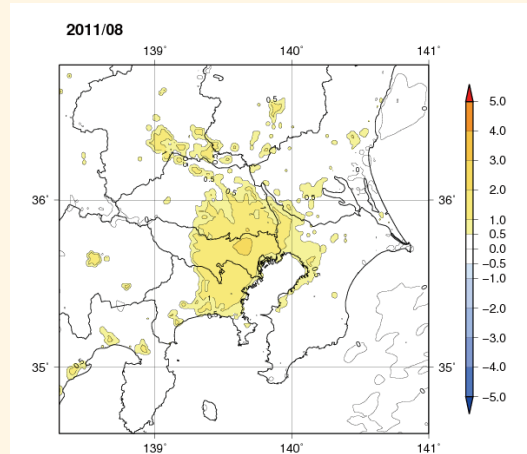
In order to promote comprehensive and effective countermeasures against urban heat islands, Japan is administering improvements to the “Heat Island Monitoring Network,” a collection of specific measures systematically compiled in 2004 by relevant ministries and agencies. Improvements included the addition of the four objectives for promoting policies to alleviate health effects on people: reducing artificial heat emission, and improving land surfaces, urban morphology and lifestyle. The MLIT focuses on promoting policies for the swift acquirement of greenery and open spaces.

Graphic II-8-6-2 Heat Island Monitoring



Observed long-term changing trend in temperature, number of extremely warm nights, etc., (*)
 (*) Counting nights with minimum temperatures of 25°C or higher.

Source) Japan Meteorological Agency



Urban heat island intensity defined as differences in temperature between simulations with urban ground conditions and pristine ground conditions (Top graph) Kanto region (Bottom graph) Kinki region

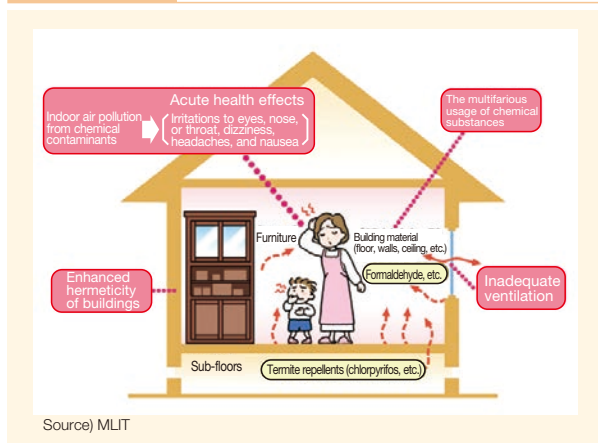
5 Countermeasures for sick building syndrome and soil contamination

(1) Countermeasures for sick building syndrome

Sick building syndrome describes a situation where materials used in the interior of a building disperses chemical substances which are hazardous to health. Japan is taking measures such as regulations on building materials and ventilation in the “Building Standard Act,” and formulating performance labeling systems based on the “Housing Quality Assurance Act.”

In the construction of government facilities, Japan has implemented restrictions over the usage of building materials containing chemical substances, as well as measuring the indoor concentration of airborne chemical contaminants after completing construction.

Graphic II-8-6-3 Visualization of sick building syndrome



(2) Countermeasures against issues related to dioxins in rivers and harbors

Investigations for dioxins specified in “Act on Special Measures concerning Countermeasures against Dioxins” are conducted on the water and sedimentary soil of class A river systems throughout Japan. In the river sections under jurisdiction of the MLIT, the quality of sedimentary soil of all sites and the quality of water of 229 sites out of the 233 satisfied environmental standards (FY 2012).

Countermeasures are being implemented for rivers and harbors where sediment was found contaminated with dioxins exceeding that of what is defined by the environmental quality standard based on “The Manual for Countermeasures against Sediment Contaminated with Dioxins in Rivers and Lakes” and “The Manual for Countermeasures against Sediment Contaminated with Dioxins in Harbors (Revised Edition)” MLIT also supports pollution control projects for rivers and harbors.

(3) Measures against asbestos

Issues concerning asbestos are life-threatening. As buildings that were built in the 1970s, when mass amounts of asbestos was imported to Japan, reach their dismantling period, it is important to implement preemptive measures to prevent injuries from occurring.

In order to advance the removal of asbestos in already existent facilities, Japan is following up on the status of measures towards removal and dispersal prevention in facilities under jurisdiction of respective ministries or agencies.

In addition, measures for removing spray-applied asbestos insulation in already existing buildings are being promoted through activities such as composite subsidies for improving social infrastructures. The removal of spray-applied asbestos insulation during remodeling or expanding buildings is also mandated by the “Building Standards Act.”

Furthermore, Japan is promoting the dissemination of information in efforts such as compiling data bases on referential cost estimates for removal work of spray-applied asbestos insulation, documents useful for identifying building materials containing asbestos (Visually identifiable building materials containing asbestos) and information on such materials, as well as pamphlets for measures related to asbestos in buildings.

6 Environmental measures in construction

In order to reduce the impact that construction has on the atmospheric environment, usage regulations based on the “Act on Regulation, etc. of Emissions from Non-Road Special Motor Vehicles” are being enforced on construction equipment that do not travel on roads. Standards for emission regulations have sequentially gone under reinforcement since 2011. Additionally, Japan is promoting the use of reduced emission type construction machinery in projects under the direct jurisdiction of the MLIT, seeking to stimulate the dissemination of such equipment. In 2010, Japan established a system for certifying construction equipment with exceptional CO₂ reducing capabilities, such as hybrid vehicles, as low-carbon type construction equipment and is providing support through financing systems. Moreover, Japan has

established mileage measurement methods and mileage standards for major types of construction equipment, such as hydraulic shovels, bulldozers, and wheel loaders to facilitate the quantitative identification of energy-saving capabilities.

Section 7 Observing, monitoring, and forecasting changes in the global environment

1 Observing and monitoring the global environment

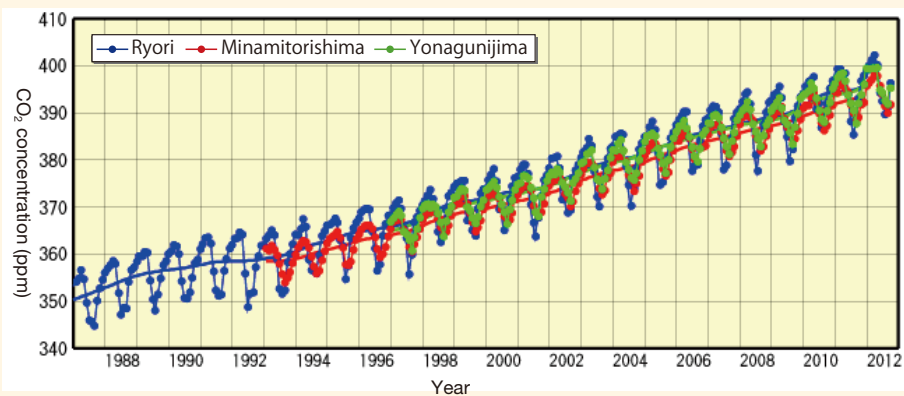
(1) Observing and monitoring climate change

In order to monitor the condition of greenhouse gases, the Japan Meteorological Agency (JMA) is observing CO₂ and other gases in the atmosphere at three locations in Japan, as well as gases in the atmosphere and seawater in the western North Pacific by JMA's research vessels, and the gases in the upper air over the western North Pacific by aircraft. Furthermore, climate changes are monitored, and solar and infrared radiation being observed in five locations throughout Japan in order to enhance the certainty of global warming projections.

In addition, JMA observes increases in sea levels which accompany global warming, and publish information on the long-term change trends in sea levels around Japanese coasts.

In other fronts, the Japanese 55-year reanalysis (JRA-55), an extension of the Japan 25-year Reanalysis (JRA-25) project achieving higher quality, is currently underway. Originally, the JRA-25 aimed to enhance the accuracy in monitoring climate variability and seasonal forecasts through the consistent analysis of global atmosphere over a span of 25 years. This was then extended to the JRA-55 for further accuracy.

Graphic II-8-7-1 Shifts in CO₂ concentration throughout Japan



Source) Japan Meteorological Agency

Based on the observation results as above, JMA publishes the “Climate Change Monitoring Report” and the “Report on Climate Change and Extreme Weather” summarizing the current situation and future projection of climate change, extreme weather events, global warming and other global environmental events. Serving as the World Data Centre for Greenhouse Gases (WDCGG) of the World Meteorological Organization (WMO), JMA also archives and provides observation data on greenhouse gases around the world.

(2) Initiatives aimed to improve next generation geostationary meteorological satellite

The next generation geostationary meteorological satellite “Himawari No.8 and 9” implement disaster prevention functions against typhoons and concentrated downpours, as well as enhancements ahead of other countries in monitoring functions for the global environment, including trends in global warming, to become “Geostationary Earth Environment Observation Satellites.” As of now, Himawari No. 8 is scheduled for launch in 2014 and No. 9 in 2016; the assembly of these two satellites began in 2009.

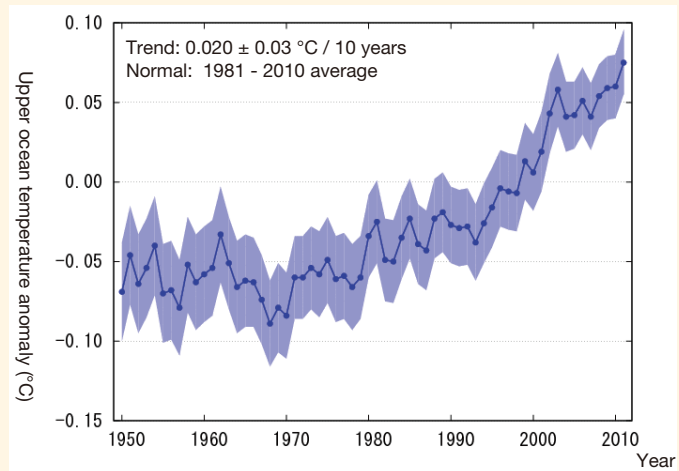
(3) Observing and monitoring the ocean

Oceans decelerate global warming by absorbing heat and CO₂, which is a major greenhouse gas. In order to monitor global warming, it is essential to accurately observe oceanic conditions.

In 2010, the Japan Meteorological Agency (JMA) enhanced monitoring capabilities of their research vessels and has been conducting highly accurate oceanographic observations by international collaborative efforts. JMA also monitors oceanic conditions related to global warming by utilizing data obtained by these vessels and that of international observation programs.

In addition to research vessels, various types of observation data obtained by Argo floats, (oceanic robotic probes that automatically profile underwater conditions) and satellites, are gathered and analyzed to integrally diagnose the overview on present and future changes in oceanic conditions related to global warming. This information is published as the “Marine Diagnosis Report.”

Graphic II-8-7-2 Monitoring the global environment by research vessels



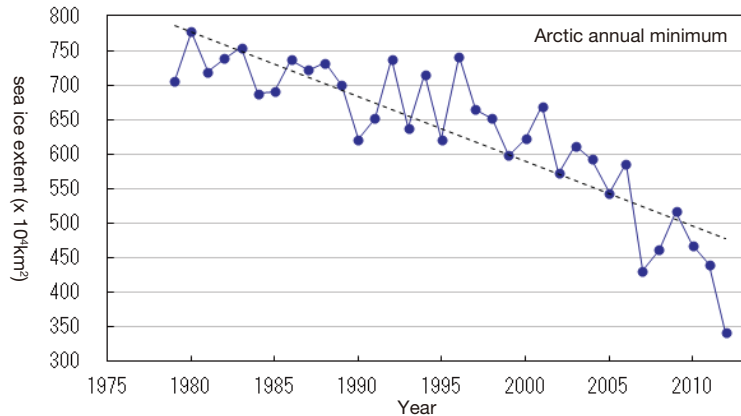
Upper (0 – 700m) ocean temperature anomaly. The globally averaged upper ocean temperature rose from 1950 to 2012 at a rate of 0.020°C per decade as a long-term trend with interannual variation.

Source) Japan Meteorological Agency

Graphic II-8-7-3 Example of a “Marine Diagnosis Report” published on the Japan Meteorological Agency website

[Arctic sea ice extent in the summer of 2012]

- The Arctic sea ice extent in the summer of 2012 shrank to 3.42 million km², the lowest since 1979 in recorded data.
- From June to August 2012, due to an inflow of warm southern winds over the Canadian Arctic Archipelago and the Beaufort Sea north of Alaska, air temperatures over the Arctic region were higher than normal. In addition, an atmospheric depression that developed a low pressure centered over the Arctic Sea in early August believed to have hastened melting in the sea ice.
- The significant shrinkage of the arctic ice area in the summer of 2012 is believed to be the result of a combination of weather conditions that melt ice and the long-term trend of decreasing Arctic sea ice.



[Time-series representation of annual minimum Arctic from 1979 to 2012] The dotted line indicates the trend of 1979 to 2012.

In order to complement data obtained from Argo floats, the Japan Coast Guard constantly monitors variation of the Kuroshio around the Izu Islands using high-frequency radar, and releases the observation data. In addition, the Japan Oceanographic Data Center collects and manages data obtained by Japanese marine research organizations, and discloses it to the relevant agencies and to the public.

Column

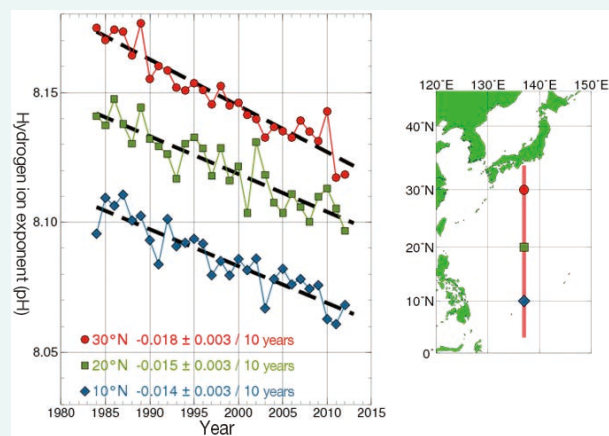
Providing information on the Ocean acidification

Oceans are considered to absorb about 30% of carbon dioxide (CO₂) emitted by human activity. This absorption of CO₂ benefits humankind by reducing the concentration of CO₂ in the atmosphere and consequently decelerating global warming. However, as anthropogenic CO₂ is absorbed, the chemical properties of surface seawater change and pH (hydrogen ion exponent) decreases. The decrease in seawater pH, or ocean acidification, is of particular concern as it reduces the CO₂ capacity of sea water and leads to the acceleration of global warming. Additionally, higher acidity of ocean water can potentially have massive impacts on marine ecosystems, raising concerns over effects on economic activities such as the fishing industry and tourism that rely on oceanic tourist resources such as coral reefs.

For these reasons, in November 2012, the Japan Meteorological Agency (JMA) began routinely releasing monitoring information related to ocean acidification for the first time in Japan. This information, based on oceanographic observation data collected in the western North Pacific over long periods of time by JMA research vessels. JMA estimated the pH in surface waters between 3°N and 34°N along the 137°E meridian, one of JMA's repeat hydrographic lines, in winter since 1984 using CO₂ concentration and related data in surface waters. Results revealed that the pH is decreasing about 0.02 per decade at all latitudes along the 137°E meridian, indicating that ocean acidification is progressing.

In order to properly counteract the acidification of ocean waters, which is a serious issue in battling global warming and protecting biodiversity, JMA will continue to monitor the ocean throughout the future, and collect and provide scientific insights related to the acidification of the ocean.

This information can be found on the JMA's website (<http://www.data.kishou.go.jp/kaiyou/shindan/index.html>) including the long-term changes of the ocean related that oceanographic conditions and global warming.



Time-series representation of pH at 10, 20 and 30°N 137°E for winter (left) and JMA's repeat hydrographic line at 137°E (right). The numbers in the figure on the left indicate rates of change at each latitude.

Source) Japan Meteorological Agency

(4) Observing and monitoring the ozone layer

The Japan Meteorological Agency annually publishes the outcome of observations on ozone and ultraviolet radiation. According to these studies, the global amount of ozone continues to be low from a long-term perspective. Additionally, in order to prevent adverse effects to the human body by ultraviolet radiation, information on the topic is published daily using a numerical index (UV index) for easy comprehension of the intensity of ultraviolet radiation.

(5) Promoting routine observations in Antarctica

Geospatial Information Authority of Japan is conducting geodetic observation of the Antarctic regions, creating topographic maps, and developing digital elevation data. The achieved results contribute to smooth and safe activities of Antarctic research expeditions, and contribute to international activities related to the research of global environmental changes, geodetic survey, and acquiring geospatial information.

The Japan Meteorological Agency continues to conduct observations on the ozone, solar and infrared radiation, and surface and upper-air at Syowa Station (Antarctica). Gathered observation data contributes to monitoring and research on the global environment, such as the changes in Antarctic ozone hole and global climate, and is utilized for the formulation of international policies.

The Japan Coast Guard (JCG) is conducting bathymetric surveys. The bathymetric data is used for the nautical charts and also used as the basis for research related to past environmental conditions such as glacial erosion and sedimentary depositional. In addition, JCG conducts tidal observations that contribute to monitoring of the fluctuations in sea levels which have close relation with the global warming.

2 Projection of future conditions of the global environment

(1) Research concerning global warming

The Japan Meteorological Agency and the Meteorological Research Institute are developing prognostic models on changes in climate around Japan and the world, and actively participate in international research programs such as the World Climate Research Program (WCRP). The Meteorological Research Institute has been conducting projection studies on global warming and developing an Earth System Model, including those for the carbon cycle process, and strives to contribute to the Intergovernmental Panel on Climate Change (IPCC) 5th Assessment Report which is to be published between 2013 and 2014. In 2013, the Japan Meteorological Agency published “Global Warming Projection Vol. 8” which shows more detailed global warming projections over Japan compared to the past by using advanced global and regional climate models.

In order to gain understanding on the causality of climate change to hydrospheric disasters, the National Institute for Land and Infrastructure Management conducts observations on the changes in the amount of water flowing in rivers.

(2) Activities of the Tokyo Climate Center

In order to support operations for disseminating climate information around the Asia-Pacific region, the Japan Meteorological Agency is serving as a regional climate center for the World Meteorological Organization, and provides information and technical support for activities related to monitoring extreme weather conditions, long-range forecasts, and global warming projections to National Meteorological Services of various Asian nations.

3 Promoting the Global Mapping Project and the world geodetic network

Japan takes a leading role in the Global Mapping Project, which has 182 participating nations and regions as of December 2012, by serving as the secretariat of the International Steering Committee for Global Mapping and developing the Global Map Version 2 (digital geospatial information on global terrain) in collaboration with the national geospatial information authorities of various nations, and promotes Global Map application in various fields such as monitoring and analysis of the global environment taking opportunities of the United Nations Conference on Sustainable Development (Rio+20) and others. In addition, by participating in international observation of, VLBI (Very Long Baseline Interferometry is a type of ranging method using multiple radio telescopes) and SLR (Satellite Laser Ranging is a method for measuring the range between an artificial satellite with retro-reflectors and a ground station by laser pulse), conducting measurements of tidal level and absolute gravity, and contributing to IGS (International GNSS Services), Japan has been carrying out observations and researches of tectonic activities on global scale. Moreover, Japan conducts the “Environmental Monitoring of Japan,” which produces vegetation index related to the activity of plants by analyzing satellite data.

Chapter 9

Strategic International Development and Strengthening International Contributions

Section 1 Promoting the Export of Infrastructure Systems

In emerging nations such as Asia, remarkable growth is expected to lead to greater demand for infrastructure in the future. Exporting our infrastructure system, which utilizes the technology and experiences fostered by our nation, to capture the growth of these emerging nations is an important issue for our own country's continued growth. MLIT is engaged in promoting top sales and using various conferences to gather information with both public and private sectors, spreading our soft infrastructure such as our nation's frameworks and standards, and offering support for financial procurement to promote the export of infrastructure systems. Through these efforts, comprehensive and strategic support is offered to domestic companies from the project conception stage to receive orders for specific projects as well as strengthen the international competitiveness of our country's infrastructure related businesses.

1 Expanding Top Sales

To increase the orders received for various projects by Japanese companies, top sales is actively implemented through high-level talks and hosting seminars with foreign governments as well as inviting dignitaries and government officials among other efforts. The main initiatives for FY 2012 are as follows.

(1) Thailand

In October 2012, the Minister of Land, Infrastructure, Transport and Tourism visited and met with the Prime Minister, to present the advantages of Japan's high-speed rail development as well as exchange opinions to realize the disaster management collaboration dialogue between Japan and Thailand. A memorandum of understanding on cooperation in the rail sector was signed with Thailand's Minister of Transport and an agreement was reached to share expertise and jointly host seminars among others in the rail sector.

(2) Vietnam

In October 2012, the Minister of Land, Infrastructure, Transport and Tourism visited and met with Chairman of Binh Duong Province People's Committee for talks to exchange opinions on town building undertaken by Japanese companies as part of new urban development as well as cooperation for eco-city development in Vietnam.

(3) Indonesia

At the Third Steering Committee Meeting of Metropolitan Priority Areas for Investment and Industry (MPA)^{Note} held in October 2012, the Senior Vice-Minister of Land, Infrastructure, Transport and Tourism and Indonesia's Coordinating Minister for Economic Affairs agreed to further cooperation to realize various MPA projects for rail, ports, airports, sewage, etc., smoothly and rapidly. In September of the same year, Indonesia's Vice-Minister of Public Works visited Japan to attend the Japan-Indonesia Conference on Construction and confirmed with the Senior Vice-Minister of Land, Infrastructure, Transport and Tourism that the cooperative relations in the field of construction will be further strengthened.

Note A framework to discuss Indonesia's infrastructure projects and investment regime with relevant Indonesian ministers based on the Memorandum of Cooperation Regarding the Concept "The Cooperation for Establishing Metropolitan Priority Area for Investment and Industry (MPA)" (Signed by the Ministry of Foreign Affairs, Ministry of Economy, Trade and Industry, and MLIT in October 2010) to accelerate the infrastructure development of the Jakarta metropolitan area under the coordination of Japan and Indonesia.

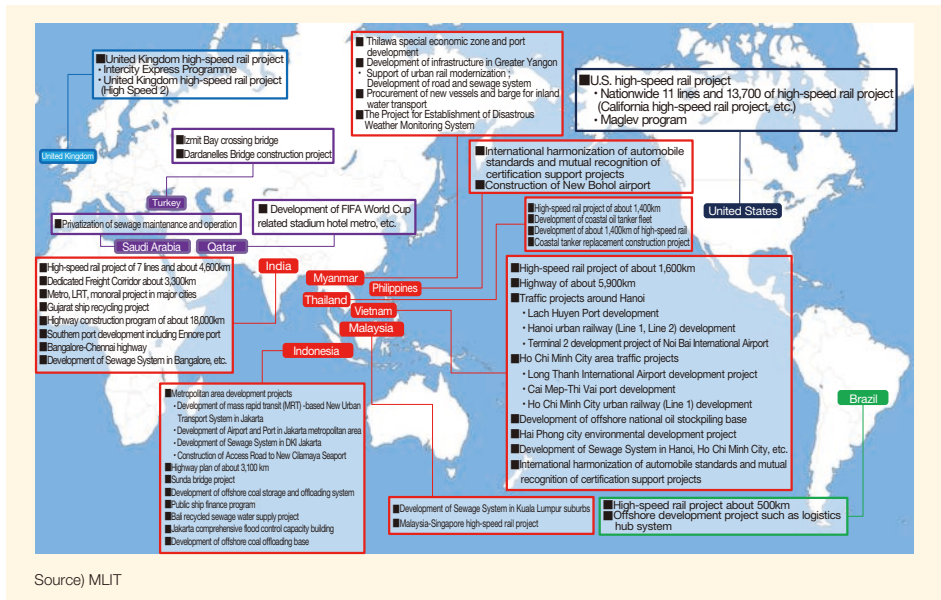
(4) Myanmar

In November 2012, the Minister of Transport visited Japan, and in a conference with the Minister of Land, Infrastructure, Transport and Tourism signed a memorandum of understanding for close cooperation in the field of transport. In February 2013, the Minister of Construction was invited to Japan, and in a conference with the Minister of Land, Infrastructure, Transport and Tourism signed a memorandum of Cooperation related to roads.

(5) India

In May 2012, the Senior Vice-Minister of Land, Infrastructure, Transport and Tourism visited India and held a conference with India's Minister of State, Road Transport and Highways and agreed to promote a cooperative relationship in the field of roads. In February 2013, the Senior Vice-Minister of Land, Infrastructure, Transport and Tourism visited India and hosted a high-speed rail seminar.

Graphic II-9-1-1 Major Projects in Various Countries



(6) Brazil

In May 2012, Minister of Land, Infrastructure, Transport and Tourism met with Brazil's Minister of Development, Industry and Foreign Trade to sign the memorandum on cooperation in the field of maritime technology and industry to strengthen the bilateral cooperative relationship in that field.

(7) Qatar

In February 2013, the President of Administrative Control and Transparency Authority of Qatar visited Japan to attend the Seminar on Qatar Infrastructure Projects in Tokyo, Japan and confirmed the further development of cooperative bilateral relations including infrastructure development in preparation for hosting the 2022 FIFA World Cup in a conference with the Minister of Land, Infrastructure, Transport and Tourism.

(8) United States

In July 2012, the Senior Vice-Minister of Land, Infrastructure, Transport and Tourism visited the United States and in talks with the United States Deputy Secretary of Transportation and other officials to announce Japan's cooperation for high-speed railway projects and confirms Japan-U.S. cooperation in the field of aviation safety. Also, in February 2013 at the Japan-U.S. summit meeting the Prime Minister made proposals for the implementation of superconducting maglevs.

Column

Japan's Railway System Making a Successful Homecoming to the United Kingdom, the Birthplace of Railways after 140 Years

In July 2012, 140 years since Japan built a railway connecting Shinbashi and Yokohama after learning from the United Kingdom, the birthplace of railways, a joint venture including Hitachi, Ltd. was contracted for the high-speed railway train replacement project (IEP: Intercity Express Programme). This project's scale is the

largest in UK rail history and the project budget is roughly 4.5 billion pounds (540 billion yen at 120 yen per pound) for the order of roughly 600 carriages and roughly 30 years of carriage maintenance work.

The history of our nation's railways was built with technology from the UK and was constructed under the direction of British engineers and locomotives were imported from the UK. In the present, Japan has accumulated technological development and experience and for bullet trains, it boasts world-class safety and reliability as indicated by zero passenger casualties in 48 years since beginning operations and less than one minute average delays.

When the railway system renewal project was conceptualized in the UK, major manufacturers from around the world dominated the European market and some thought Japanese companies would not be able to penetrate the market. However, in addition to the high technological expertise of Japanese companies and steady marketing efforts, the top sales of the Minister of Land, Infrastructure, Transport and Tourism and other ministers, strengthening the framework for financing by the Japan Bank for International Cooperation (JBIC) and other public financial support, regular bilateral talks between railway officials at the Director-General level, and other efforts to build a relationship between the railway authorities and relevant companies lead to the contract being awarded.

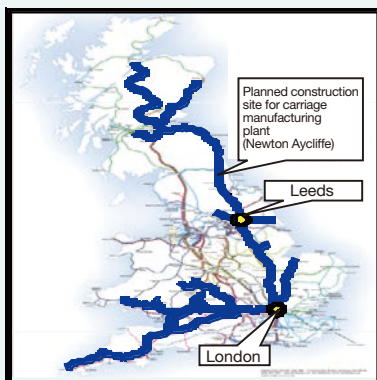
This project represents the public and private sector acting as one to successfully contract a project and in addition to the delivery of carriages, the carriage manufacturing plant being constructed in the UK will create new employment and also greatly contribute UK's society and economy as the birthplace of railways.

Using this successful bid as a starter, efforts will be ramped up further to pursue more international opportunities so Japan's superior railway systems can be implemented abroad.

Reference) Efforts leading to the successful bid of this project

- February 2009 Joint venture including Hitachi, Ltd. wins priority negotiation rights
- April 2010 Laws revised to allow the Japan Bank for International Cooperation (JBIC) to finance high-speed railway projects in industrialized nations
- May 2010 following a change in UK administration, the project was considered for cost cutting
→ this was followed by lobbying toward the UK from the Minister of Land, Infrastructure, Transport and Tourism and other relevant ministers
- March 2011 the UK Department for Transport announced the intent for resuming negotiations with the Hitachi consortium and aim to officially conclude the contract
- September 2011 Secretary of State for Transport Hammond (time) visited Japan and test rode the bullet trains, etc.
- July 2012 Hitachi's consortium wins contract

IEP Route Map



Source) MLIT

An Image of a Carriage for IEP



Source) Hitachi, Ltd.

2 Strengthening Public and Private Sector Information Gathering Through Various Councils

The public and private sector share information and exchange opinions regarding infrastructure projects through the organization of various councils (International Water Infrastructure PPP Council, International Road PPP Council,

International Railway Promotion Council, Conference of Oversea Port Logistics Projects, and the International Eco-City Council).

One measure from FY 2012 was the Third Conference of Oversea Port Logistics Projects held in July and a Myanmar working group was established to promote port and logistics projects in Myanmar. In February 2013 the Fourth International Water Infrastructure PPP Council was hosted and high officials and others from the four countries of Indonesia, Myanmar, United Arab Emirates, and Vietnam were invited to the council and in addition to sharing the needs and water infrastructure development plans, the technology and expertise of Japanese companies were highlighted. Also, in the same month the Fourth International Road PPP Council was held and information was exchanged on road projects in Myanmar and the technology and expertise of Japanese companies was shared.

3 Active Promotion of Soft Infrastructure

Soft infrastructure such as the frameworks, standards, technology, and operational expertise accumulated in Japan is being spread to the world and internationally standardized to foster an environment that allows Japanese companies to penetrate international markets. Specifically, automobile standard certification frameworks, implementation support for the Port and Harbor Electronic Data Interchange (EDI, an electronic system to handle port related procedures), logistics systems, air traffic control systems, disaster prevention package, Intelligent Transport Systems (ITS), and Green Building/City technology (measures to spread environmentally friendly architecture and cities) are all being promoted abroad.

4 Supporting the International Expansion of Japanese Companies Through Funding

MLIT is working to strengthen the support framework for the financial aspects of exporting the infrastructure of Japanese companies. And in 2010 high-speed railways, urban railways, and the water sector were added to the fields that Japan Bank for International Cooperation (JBIC) could fund investments in industrialized nations. The first JBIC investment after such investment funding in high-speed rail projects was made possible was to the UK high-speed railway carriage renewal project (see the Column, Japan's Railway System Making a Successful Homecoming to the United Kingdom, the Birthplace of Railways After 140 Years).

Also, as a contact window for Japanese companies regarding issues with construction technology and management for international construction projects, MLIT established a "overseas construction hotline" to not only of advice but to conduct talks with foreign governments based on the consultation to ensure that Japanese construction companies can continue to expand abroad in a stable manner.

Also, for the purpose of supporting the improvement of procurement, safety, quality control and other aspects of project oversight abilities in developing countries, seminars to share our expertise in aspects like bidding contracts, construction safety, and quality assurance were held in July 2012 in Cambodia and September in Vietnam.

Additionally, to achieve the objective of over 2 trillion yen in new contracts awarded abroad per year to the construction industry by 2020, measures are being implemented such as establishing an international construction market database, gathering information on the construction industry from diplomatic missions, strategic thinking for construction companies to participate international PPP projects, strengthening human resource development, and strengthening contracts and risk management.

Column

Promoting the Export of Infrastructure Systems in the Airport Sector - Package Support for Airport Development, Operation, and Management in Vietnam's Noi Bai International Airport -

Japan accumulated world-class technology and rich experience and expertise for the development, operation, and management in the course of conquering various issues following rapid economic expansion such as increased demand for air travel and the shortage of airport capacity that it created. MLIT is using this strength to its maximum advantage to provide a total solution that matches the other nation's needs from

support for the hard aspects of design and construction of airports as well as the soft aspects of operation and management after opening and human resources training to support this to promote the export of infrastructure systems in the field of airports.

Regarding cooperation for Noi Bai International Airport in Vietnam's Capital, Hanoi, airport usage increased drastically along with economic growth and the expansion of the airport's capacity was an urgent matter; leading to a construction project for Terminal 2 and other facilities which was began in February 2012. This project is to build an international airport that serves as a "doorway into Vietnam" and along with 2013 being the year marking 40 years of Japan-Vietnam diplomatic relations, the project is symbolic of the close cooperative relationship between Japan and Vietnam.

This project was implemented using the framework for international cooperation for hard and soft aspects based on a request from the government-run Airports Corporation of Vietnam (ACV), the administrator of Noi Bai International Airport. First, for the design of the airport and construction (hard aspects), yen loans were used for project funding, a joint venture consisting of Japanese and local companies was given the contract, and construction management was carried out by Japanese companies, thereby utilizing Japanese airport construction technology and expertise. Also, for the operation and management after opening the airport, for the human resources development (soft aspects) to support this, an action plan was created and its progress monitored in parallel to airport construction to ensure that coordination with airlines and other relevant parties as well as securing the human resources necessary for airport operations and training is completed*.

* The main soft aspects for cooperation were ① Terminal 2 Operation and Management Preparation Committee, ② dispatch of experts, and ③ human resources training; the support carried out in 2012 is specifically as follows:

- ① Terminal 2 Operation and Management Preparation Committee: Participants included MLIT, Japan International Cooperation Agency (JICA), and Narita International Airport Corporation (Japan's airport operator) from Japan, and from Vietnam ACV participated to create an organization framework, and draft an implementation plan for operation and management as well as monitor the progress together in accordance with the "To Do List" (deciding the management concept, drafting a mid-term project plan, concluding agreements and contracts with airline companies and tenants, conduct various training, and establish airport usage fees among roughly 300 items).
- ② Dispatch of Experts: The hydrant type fueling system adopted for this project as well as the data system and other systems using advanced technology, technical support was implemented so that ACV could handle the operation and management appropriately on their own. For the fueling system a long-term expert was dispatched to the site.
- ③ Human Resources Development: ACV personnel were invited to Japan to receive airport operation and management training, visit Japanese airport facilities, and exchange opinions with terminal administrators, etc.

Illustration of Noi Bai International Airport Terminal 2 Completion



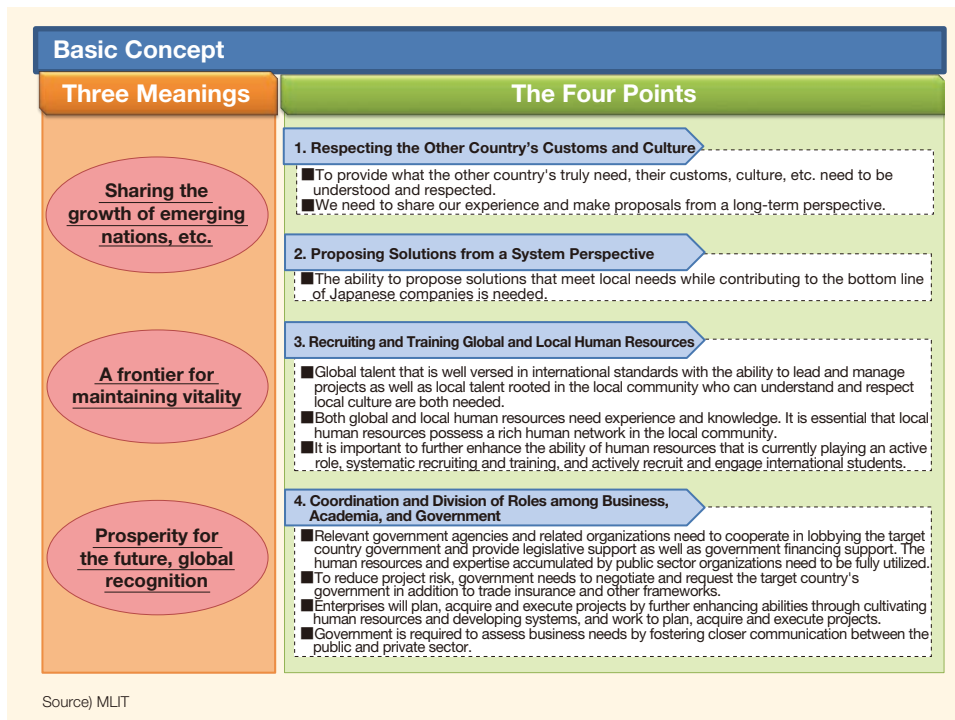
Source) Airports Corporation of Vietnam (ACV)

5 Considering the Future of Infrastructure System Export Strategy

In May 2012, the "Experts Meeting for Promoting the International Expansion of Infrastructure" was held and through six meetings, past cases of international infrastructure expansion were evaluated and studied to clarify future issues. In February 2013, the strategy and specific policies to conquer these issues were compiled as the final report, "Infrastructure System Export Strategy for the Future" (Graphic II-9-1-2).

In the future, the implementation of specific policies will be reviewed and new deliberations will take place in accordance with new developments.

Graphic II-9-1-2 The Future of Infrastructure System Export Strategy



Section 2 Showing Initiative through International Cooperation and Coordination Efforts

MLIT uses bilateral and multilateral meetings with various countries, mainly for developing nations, for cooperation in human resources development through the acceptance of trainees and hosting seminars as well as dispatch experts through JICA and other relevant organizations. Various initiatives taken involve the Asia region, international coordination in the transport sector, cooperation in the field of disaster prevention, and responding to international water issues among others.

(1) International Coordination in Asia and Other Emerging Nations and Regions

The “ASEAN-Japan Transport Partnership” framework is one of the initiatives for international coordination between countries in Asia promoting the strengthening of cooperation projects in a variety of fields such as logistics, safety, and environment. The “10th ASEAN and Japan Transport Ministers Meeting” was held in November 2012 in Indonesia, and Japan’s propose for “promoting “Quality Transport” within ASEAN” was adopted as the guiding principle for Japan-ASEAN cooperation for the next decade and to improve the safety and security of transport, four new projects were endorsed: ① Comprehensive Cooperation on Technology for Safe and Efficient Transport, ② Cooperation on Natural Disaster Prevention in the Transport Sector, ③ Project for Improvement and Harmonisation of Safety Standards and Ship Inspection for Coastal Ships, and ④ New Regional Action Plan on Port Security (New RAPPS) under ASEAN-Japan Maritime Security Transport Programme.

For Myanmar, a memorandum of cooperation between the two countries in the field of transport was signed between the Myanmar Minister of Transport and Minister of Land, Infrastructure, Transport and Tourism in November of the same year and an agreement was reached for promoting specific cooperation such as to set up regular high-level meetings and conduct human resources training and exchanges.

For Indonesia, in July of the same year, the Third Japan-Indonesia Senior Transport Officials Meeting was held and both countries confirmed the continuation of bilateral cooperation in the field of transport in addition to implementing exchanges of opinion on soft infrastructure such as transport-related regulations and systems for the purpose of establishing a “safe and high quality transport system” in both countries.

For Vietnam, in October of the same year, the Third Vice-Ministerial meeting between the Ministry of Transport, Vietnam and MLIT was held and confirmed further coordination in the future to discuss hard and soft transport infrastructure development and share information and knowledge per field. For India, in October of the same year, the First Japan-India Senior Transport Officials Meeting to Promote High-Speed Railway Systems was held to confirm concrete bilateral cooperation in the field of high-speed rail.

For Russia, in June of the same year the “Japan-Russia Transport Working Group” was created and the first Senior Transport Officials Meeting was held in Tokyo and further discussions to modernize Russia’s transport infrastructure starting with the Far East among other issues were confirmed.

(2) International Coordination in the Transport Sector

The International Transport Forum is an international framework for transport ministers from 54 countries along with world-renowned experts and businesspersons to have free and high-level discussions on transport policy every year; past discussions include the climate change problem regarding transport sector and globalization.

At the ministerial meeting held in May 2012, discussions revolved around the theme of “seamless transport”. Our country served as the chair, representing the first time as an Asian country, to put together the Declaration from Ministers on the promotion of making transport seamless for the purpose of promoting economic growth, promoting trade, and improving access to jobs, education, and social training. Japan will continue to actively participate in the forum as a prominent member of Asia.

Column
4th Japan-China-South Korea Conference on Logistics in Busan, South Korea

The three countries of Japan, China, and South Korea is engaged in an initiative for mutual cooperation to realize a seamless and environmentally friendly logistics system through governmental discussions including the Japan-China-South Korea Ministerial Conference on Logistics which is held every two years since 2006.

In July 2012, the Fourth Japan-China-South Korea Ministerial Conference on Logistics was held in Busan, South Korea. At this conference the following four points of ① promoting the mutual transit of container chassis, ^{Note 1} ② the Northeast Asia logistics information service network, ^{Note 2} ③ further promoting the standardization of pallets ^{Note 3} and other logistics materials, and ④ strengthening cooperation between Japan, China, and South Korea regarding green logistics were part of the agreement on the direction of cooperation in the field of logistics and a joint statement ^{Note 4} was announced. In accordance with the conference agreement, Japan and South Korea cooperated on a pilot project allowing domestic laws to be applied for chassis of the other nation to allow for mutual transit.

Also, a seminar for participants from the private sector and research institutions was held along with the conference. At the seminar private sector businesses from Japan, China, and South Korea announced proposals including topics such as the chassis and RORO ships ^{Note 5} to establish seamless logistics in Northeast Asia and contribute to furthering logistics in Japan, China, and South Korea.

Chassis Mutual Transit

The same chassis can be driven in Japan and other countries following marine transport (The towing cars are two separate types for domestic transport in South Korea and Japan)

Current Situation


South Korean Chassis (Inside South Korea) → Port ← Ship-only chassis (RORO ship at sea) → Port ← Japanese Chassis (Inside Japan)

Mutual Transit of Chassis

South Korean Chassis (Inside South Korea) → Port ← Same Chassis (RORO ship at sea) → Port ← Japanese Chassis (Inside Japan)

<Benefits of Mutual Transit>

- Reduce lead time
- Reduce the risk of damaged goods
- Reduce costs



Chassis being loaded on RORO ships

Japan-South Korea Pilot Project for the Mutual Transit of Chassis

- Japan and South Korea agree on “mutual cooperation to implement a pilot project later in the year” at the Japan-China-South Korea Ministerial Conference on Logistics held July, 16 2012. [Overview of the Pilot Project]
 - Transport automotive parts to Japan from South Korea to the manufacturing base of Nissan Motor Kyushu Co., Ltd., using the chassis of both countries via the Busan-Shimonoseki shipping route.
 - On the basis that the laws and regulations of both nations will be applied, the two countries will extend cooperation based on applications from operators.
- The transit of Japanese chassis within South Korea will begin from October 10, 2012.
- The transit of South Korean chassis within Japan will begin from March 27, 2013.

Source) MLIT

Note 1 A towed vehicle without a powertrain

Note 2 An initiative to interconnect the port logistics information systems established by Japan, China, and South Korea so that the entry and departure of ships in the ports of Japan, China, and South Korea and container movement among other information covering a wide area can be centrally accessed from the Internet.

Note 3 A loading platform for packaged and aggregated cargo necessary to efficiently load and unload containers using a machine when handling cargo

Note 4 An overview of the joint statement can be found at the website below:

<http://www.mlit.go.jp/common/000217815.pdf>

Note 5 Cargo ships with built-in ramps that can load wheeled cargo such as chassis

Column

Contributing to the Success of the Transport Summit as Asia's First Chair Country - International Transport Forum (ITF) -

Every year at the ITF a “transport summit” is held where discussions are conducted regarding transport policy issues by the Transport Ministers of 54 member countries, business leaders, academic experts, and others. The transport summit is an exclusive place where Transport Ministers discuss onwide variety of transport related issues and serves as a place where experiences of various countries are shared to explore solutions on various issues. It also contributes greatly for establishing personal networks that transcend the boundaries of industry, government, and academia to establish new cooperative relationships. Each year's theme is chosen from major issues related to global transport. In the past, “climate change issues,” “globalization,” “innovation,” and “society” were themes that were discussed to show new directions of transport policy.

At the summit held in 2012, under the theme of “seamless transport,”^{Note} Japan served an important role as the first Asian country to chair the summit. Especially at the Minister's session, the Minister of Land, Infrastructure, Transport and Tourism served as the Chairperson and contributed greatly for the adoption of the “seamless transport” policy declaration by Ministers of member countries. This declaration states that the Ministers will cooperate to solve the problem of seams such as connections between transport modes and lack of infrastructure.

The Senior Vice-Minister of MLIT held a presentation in the meeting addressing the current status on “Seamless Transportation” in Japan. The Senior Vice-Minister emphasized the need for the development of barrier-free public transportation to attain “Seamless Transportation” in order to accommodate aging societies that many countries will face in the near future, as well as introducing the superior city transportation method of high speed railways, etc.

Transport Ministers of Member Countries, etc.



Source) ITF

Additionally, at the session discussing pirate measures, the current status and issues regarding the pirate problem was discussed and a joint declaration was adopted stating the IMO to continue deliberations.

The ITF also includes the participation of well-known speakers from around the world including the keynote speakers Giuseppe Sciarrone, CEO of Nuovo Trasporto Viaggiatori an Italian rail operator and Ángel Gurría, Secretary-General of the OECD. From Japan, Chairman Miyahara of NYK Line, Chairman Kasai of Central Japan Railway Company (JR Central), Chairman Seino of East Japan Railway Company (JR East), and others participated as speakers to present our country's transport system and contribute to discussions.

Japan will continue to take an active role in ITF to make the most from our experience as serving as the chair.

The Minister's Session



Source) ITF

Note Discussion on how to remove seams, as factors that inhibit smooth transport, were held from various angles.

(3) Cooperation in Disaster Management

When a disaster occurs abroad, experts from MLIT and Japan Coast Guard participate in the Japan Disaster Relief Team dispatched as part of the rescue team or expert team. Participation in recent years includes rescue teams dispatched to the Great Sichuan Earthquake in China (2008) and the Christchurch earthquake in South Island, New Zealand (2011). For the floods that occurred in Thailand in 2011, expert teams consisting of members from the public and private sector were dispatched to Thailand, including drainage pump vehicles and experts on drainage measures for the first time internationally.

Also, for the purpose of applying lessons for disaster prevention from disaster stricken areas abroad to disaster management policies in Japan, in FY 2012 field studies were conducted in Thailand (floods), United States (Hurricane Sandy), and others. Especially regarding Hurricane Sandy, it caused great damages by directly hitting New York and since this was a large-scale water disaster that occurred in a big city in an industrialized nation for the first time, MLIT and disaster management-related academic organizations dispatched a joint study team to apply the lessons learned to measures for flood management in metropolitan area in Japan.

Taking the lessons learned from the Great East Japan Earthquake and the lessons learned from our countries efforts in the Thailand floods mentioned above, the MLIT is promoting an initiative to strategically expand our “disaster management package” which integrates human resource, technologies, and knowledge that contribute to improving disaster management capacity for countries in Asia and the countries vulnerable to disaster, in accordance with their needs.

Specifically, in order to share Japan’s technology and experience regarding disaster management for the purpose of contributing to the improvement of disaster management capacity in other countries and creating business opportunities in the field of disaster management, workshops on water and disaster management were held in November 2012 in South Africa and in Myanmar and Indonesia in January 2013.

Column	Initiatives in the Water-related Disaster Field toward the Mainstreaming Disaster Risk Reduction
<p>The phrase “Mainstreaming Disaster Risk Reduction” has been used since the United Nations established the United Nations International Strategy for Disaster Reduction (UNISDR). Currently, there is no clear definition, but it is generally used in the following three ways:</p>	

1. That each government makes “disaster management” policies a priority issue.
2. That “disaster management” is implemented in all development policies and plans.
3. To increase investments in “disaster management”.

As seen by the floods in Thailand (September to December 2011), water-related disasters are becoming more frequent and intense in many parts of the world. The population of victims affected by water-related disasters in Asia account for roughly 85% of water-related disaster victims for the entire world. Despite this situation, countermeasures for water-related disasters are still lacking and the aspects of disaster management and water management need to be strengthened in an integrated manner. Under these circumstances, the 6th World Water Forum was held in March 2012 and in June the United Nations Conference on Sustainable Development (Rio+20) was held to discuss water-related disasters in the context of global water issues.

In order to share the lessons learned from the Great East Japan Earthquake (March 2011) with the world, Japan hosted the “World Ministerial Conference on Disaster Reduction in Tohoku” in July 2012 and in October of the same year, the “Annual Meetings of the International Monetary Fund and the World Bank Group” were held in Japan for the second time in 48 years since 1964. Financial ministers from around the world participated in the Annual Meeting and engaged in intensive discussions about disaster management. In conjunction with the Annual Meeting, the World Bank, MLIT, and Japan International Cooperation Agency (JICA) jointly hosted the “Seminar on Sharing Lessons from Great East Japan Earthquake.” Discussions were held on how various countries from around the world including Japan can support the “Mainstreaming Disaster Risk Reduction” in developing countries in light of the lessons learned from the Great East Japan Earthquake.

In light of these developments, in March 2013 the “Special Thematic Session of the General Assembly on Water and Disasters” was held at the United Nations headquarters in New York, jointly hosted by the UN Secretary-General, UNSG’s Advisory Board on Water and Sanitation (UNSGAB), and High Level Expert Panel on Water and Disaster (HLEP/UNSGAB) for the purpose of discussing the direction of actions to be taken on a global scale regarding water and disasters. His Imperial Highness the Crown Prince of Japan attended this meeting to make a keynote speech on creating a society more resilient to disasters by making use of available means and learning from lessons in history. The Vice-Minister for Engineering Affairs of MLIT took the podium as a panelist to present the lessons learned from the experience of tsunamis caused by the Great East Japan Earthquake.

UN Special Thematic Session of the General Assembly on Water and Disasters



Source) High Level Expert Panel on Water and Disaster (HLEP/UNSGAB)

In 2015 the Hyogo Framework for Action,^{Note 1} an international framework for disaster management, will be up for review. In preparation for the Third UN World Conference on Disaster Risk Reduction to be held in Japan, there will be discussions for the formulation of a new framework to follow the Hyogo Framework for Action and positioning disaster management on the new development goals (post Millennium Development Goals (MDGs))^{Note 2} post 2015 to promote the “Mainstreaming Disaster Risk Reduction” within development and international cooperation.

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Note 1 The Hyogo Framework for Action (HFA) is the first plan to explain, describe and detail the work that is required from all different sectors and actors to reduce disaster losses. It was developed and agreed upon at the Second UN World Conference on Disaster Reduction held in January 2005 in Kobe City, Hyogo Prefecture. The HFA outlines five priorities for action, and offers guiding principles and practical means for achieving disaster resilience. Its goal is to substantially reduce disaster losses by 2015 by building the resilience of nations and communities to disasters.

Note 2 Common goals for international society in the field of development based on the Millennium Declaration adopted at the UN Millennium Summit held in September 2000 in New York.

(4) Responding to International Water issues

As a reflection of the heightening common awareness that water issues are a global scale issue, water issues were discussed at various international conferences such as the 6th World Water Forum (March 2012), the United Nations Conference on Sustainable Development (Rio+20, June 2012), and the Special Thematic Session of the General Assembly on Water and Disasters (March 2013).

In order to support the formulation of Integrated Water Resources Management (IWRM) plans, internationally recognized as an effective method for solving water issues, MLIT cooperated with the United Nations Educational, Scientific and Cultural Organization (UNESCO), which played a central role, to create the “IWRM Guidelines at River Basin Level” and is coordinating with UNESCO and the Network of Asian River Basin Organizations (NARBO) to contribute to its wide dissemination and promotion. Also, together with Kitakyushu City, Osaka City, Tokyo Metropolis, Yokohama City, Kobe City, and Fukuoka City, MLIT formed a consortium, the Water Environment Solution Hub, to share experiences and expertise with developing countries in the field of sewage works through seminars, field studies, and training.

Additionally, to build international consensus that disaster prevention is the key to sustainable development for the reduction of global water disasters, Japan is sharing its experiences and technology and working to build international solidarity regarding the strengthening of water disaster prevention. Also, at the International Centre for Water Hazard and Risk Management, recognized as a partner organization by UNESCO, of the Public Works Research Institute (PWRI), research and development is being conducted on projects such as the Integrated Flood Analysis System (IFAS) which uses satellite information and analysis technology such as the Rainfall-Runoff-Inundation Model; the fruits of these efforts are used for human resource development efforts such as the master’s degree in water-related disaster risk management as well as accepting trainees for short-term training in water-related disaster risk management. Also, technical cooperation and international assistance is being implemented jointly with UNESCO and the Asian Development Bank such as building a flood forecast and warning system and hosting workshops targeted toward Asian countries and regions vulnerable to water disasters.

Column

Hosting the ISO International Workshop on Water

The International Organization for Standardization (ISO), which creates a large number of public international standards, established the “Implementation Task Force on Water” at the ISO Council meeting held in March 2011. Later, based on the task force’s recommendations, an “international workshop in Japan regarding water” was hosted from July 25-26, 2012 for the purpose of ① improve the recognition of water-related standards development, spread related technology, share knowledge and best practices, and spread solutions needed on a global scale, ② engage in proposals and studies for standardization to take on global water challenges, ③ determine the priorities for the development of new ISO standards in the water sector and determine a specific action plan.

Over 150 delegates from 22 countries gathered at the workshop for discussions regarding initiatives for international standards in the water sector. As a result, high priority items requiring the development of ISO standards were determined to include: ① water leakage measures, ② recycled sewage water usage, ③ effective use of sewage sludge, and ④ flooding measures among the 14 items identified. In light of the workshop’s results, standardization proposals for the effective use of sewage sludge and recycled sewage water usage were made and the standardization of the water sector is expected to accelerate even more.

View of the Workshop



Source) MLIT

Section 3 Initiatives Involving Multilateral and Bilateral Negotiations and Cooperation

1 Responding to Economic Coordination and International Organizations

(1) Responding to the World Trade Organization (WTO)

At WTO's Doha Round negotiations, Japan is actively participating in trade in service negotiations for varieties of sectors, such as chairing multi-country meetings for the maritime transport and construction sector, to further liberalize trade. Since the beginning of 2012, while Doha Round negotiations have been stalled, Japan and several volunteering countries have conducted discussions on creating a new trade in service agreement that is more appropriate for the 21st century. Also, regarding the Agreement on Government Procurement (GPA) that sets the rules for government procurements, negotiations for revisions that ensure transparency of procedures and expand market access were agreed upon at the WTO/ the 8th Ministerial meeting for revised GPA negotiations that was held in December 2011.

(2) Entering Economic Partnership Agreements/Free Trade Agreements (EPA/FTA)

Japan is strategically promoting economic partnership with the Asia-Pacific region, East Asia region, European Union and others. As of March 2013, there are thirteen EPAs/FTAs in effect with various countries and regions. With these agreements, from the perspective of increasing international competitiveness and overseas expansions of our country's industries such as transport and construction, initiatives are being implemented such as liberalizing service by removing and relaxing restriction for foreign investments, opening the market for government procurement and increasing opportunities for participation in partner countries. Also, bilateral cooperation in the field of tourism with partner countries is being advanced from the perspective of expanding personal exchanges.

2 Responding to International Organizations

(1) Responding to Asia-Pacific Economic Cooperation (APEC)

MLIT is mainly actively involved with APEC's ministerial conferences and working groups in the field of transport and tourism. At the 7th APEC Tourism Ministerial Meeting held in July 2012 in Russia, appreciation was shown for the assistance received from various member countries and regions for the Great East Japan Earthquake and lessons learned from the earthquake were shared. In August 2012, Special APEC Transportation Ministerial Meeting was held in Russia and Japan made a presentation on the role of Transport Ministers in improving the supply chain as well as cooperation with the member countries and regions of APEC. Each of the Ministerial Joint Statement adopted at the respective ministerial conference was incorporated in to the APEC Economic Leaders' Meeting held in September of the same year. Especially regarding the field of tourism, the importance of tourism for economic development and travel facilitation were incorporated. Also, the 8th APEC Transportation Ministerial Meeting is scheduled to be held in Tokyo in September 2013.

(2) Responding to the Organisation for Economic Co-operation and Development (OECD)

MLIT participates in the Joint Transport Research Centre (JTRC), which is one the OECD's subsidiaries and are jointly administered by OECD Council Working Party on Shipbuilding, Territorial Development Policy Committee (TDPC), OECD, and International Transport Forum (ITF).

OECD Council Working Party on Shipbuilding works on development of a healthy shipbuilding market, establishment of fair competition, and activation of dialogues with emerging shipbuilding countries. TDPC actively focuses on review of each member state's land and regional policies, policy deliberation such as urban policies in green growth strategies, compact city policy, surveys on recovery from disaster. JTRC takes part in the research groups on optimization of finance for use, maintenance and management of road and adaptation of infrastructure against climate anomalies and climate change, and conducts research studies on policy topics common to the member states.

(3) Responding to the International Maritime Organization (IMO) and the International Labour Organization (ILO)

As one of the world's premier shipping and shipbuilding nation, Japan actively participates in IMO activities and plays a leading role. In January 2012, a Japanese national was appointed Secretary-General for the first time. Beginning with organizational and budgetary reforms of IMO, important initiatives are being promoted for measures to reduce greenhouse gas emissions from ships, action against piracy off the coast of Somalia, and ensuring the safety of passenger ships among others and our nation is also actively contributing to deal with these issues.

For the ILO, regarding the Maritime Labour Convention adopted in 2005 for the improvement of working conditions of ship crew and establishment of fair competition conditions for international maritime transport, initiatives are being promoted for the conclusion of this convention including the implementation of deliberations and coordination regarding the formulation of domestic legislation congruent with the convention for domestic stakeholders.

(4) Responding to International Civil Aviation Organization (ICAO)

ICAO establishes certain rules for the safe and orderly development of international civil aviation and the healthy and economic operation of international air travel and transport activities. Our nation is the second highest financial contributor among member nations and also as a Council Member State of the first category (States of chief importance in air transport), participates actively in various ICAO activities to contribute to the development of international civil aviation.

3 Multilateral and Bilateral Initiatives in Various Sectors

(1) Construction Sector

In May 2012 the "Seminar on Advancing Steel Structure for High-Rise Building in Singapore" hosted to promote and raise awareness of steel structure architecture in Southeast Asia, in July of the same year the Taiwan-Japan Conference on Public Construction Interchange, October of the same year the Second Indo-Japan Construction Forum, and in February 2013 the Japan-Mongolia Construction Investment Seminar was held for the purpose of solving issues in the construction sector and establishing cooperative relationships. Also, in March of the same year, the Fourth Viet Nam-Japan Conference on Construction was held for the purpose of establishing a cooperative relationship for developing human resources for the construction sector.

(2) Water Management and National Land Conservation Sector

In Vietnam a memorandum of understanding on cooperation for water resources facilities management was signed with the Ministry of Agriculture and Rural Development in June 2012 and a seminar was hosted there in November, strengthening cooperation in the water resources sector. Technical cooperation is being carried out in accordance with the memorandum of cooperation in the field of sewage signed with the Ministry of Construction in 2010.

In Indonesia, cooperation is being carried out through a workshop co-hosted with the Ministry of Public Works held in January 2013, bilateral sewage water recycling water quality evaluation committee, and sediment control workshop based on the memorandum signed with the Ministry of Public Works in February 2012.

For South Africa, based on a joint resolution with the Department of Water Affairs, the Second South Africa-Japan Workshop on Water Resources Management was held in November of the same year in Tokyo to strengthen cooperative relations.

In Bulgaria, a seminar was held in October of the same year explaining the importance of pipeline asset management and Japanese companies were awarded contracts for pipeline renewal in Bulgaria.

Japan participated in INTERPRAEVENT, an international research society, held every four years for disaster prevention such as sediment disasters and floods as well as sediment control officials' conference and fostered exchanges with five countries including Switzerland and Austria.

With South Korea, China, France, Italy, and the United States, bilateral conferences are held on rivers and water resources management for information exchange and technical cooperation.

(3) Road Sector

Seminars were held in India, Vietnam, Philippines, Indonesia, Myanmar, and Laos to introduce Japanese road technology among other active initiatives.

Also, international expansion is being promoted with an all-star team consisting of the public and private sector along with “Japan Expressway International Co., Ltd.” with a wide perspective from the planning stage to construction as well as operation, maintenance, and management.

Also, at the World Road Association (PIARC), our country serves on the Executive Committee along with participation in 15 technical committees to promote technical exchanges and share information regarding roads and road traffic. At the PIARC Annual Conference of National Committees/Executive Committee held in October 2012, Japan’s initiatives in traffic safety were shared with various countries of the world.

Aside from these, in the field of Intelligent Transport Systems (ITS), based on a memorandum of cooperation between Japan and the United States as well as one with the European Union, a cooperative framework is established on the three axis of Japan, United States, and the European Union and regular meetings are held for future research and development as well as promotion. Also, Japan participated in the ITS World Congress held in October of the same year in Vienna to strengthen coordination and cooperation with various countries as well as appeal Japan’s initiatives for ITS to those in the field from around the world in preparation for the next congress (October 2013) to be held in Tokyo.

(4) Housing and Architecture Sector

Bilateral meetings are held regularly with South Korea, China, France, Canada, and Germany to exchange information on housing policies and architectural standards.

(5) Railway Sector

Regarding the high-speed rail plans of the United States, Brazil, Vietnam, India, and Thailand, initiatives are being promoted to push the adoption of our nation’s bullet train technology which boasts superior energy conservation, safety, stability, high frequency, and mass export. Also, for urban rail technical cooperation is being implemented to actively promote expansion abroad.

Additionally, from April 2012, to prepare for systematic international expansion, an all-star lineup of railway operators formed an international rail consulting firm (“Japan International Consultants for Transportation Co., Ltd.”) that began operations and is implementing project formulation support in target nations.

(6) Maritime Sector

In May 2012 a workshop was held in light of the memorandum of cooperation between Japan and Norway in the maritime field and an agreement was reached to coordinate efforts to lead international discussions regarding the spread and promotion of energy conserving ships.

International cooperation was furthered in the maritime field toward Indonesia, Thailand, Myanmar, and others for the promotion of coastal shipping and the shipbuilding sector.

Additionally, bilateral meetings are held regularly with major maritime nations and in FY 2012 meetings were held with the United Kingdom and South Korea to exchange information on important issues in the maritime sector.

(7) Port Sector

For Myanmar and other nations, project formulation studies are implemented for port logistics projects that are combined with port hinterland development as part of efforts to actively support the penetration of Japanese companies into countries where port development is expected in the future.

In October 2012, the 13th Northeast Asia Port Director-General Meeting was held for the three countries of Japan, China, and South Korea to discuss common port policies.

Also through the World Association for Waterborne Transport Infrastructure (PIANC), where a Japanese national serves as Senior Vice-President, and the International Association of Ports and Harbors (IAPH), our nation’s technical standards are being expanded abroad and information exchanges are being promoted multilaterally.

(8) Aviation Sector

Initiatives are being implemented for aviation safety, air traffic control, and export of infrastructure systems around the Asia-Pacific Region that is close to our country's airspace. In 2012, as a bilateral initiative, aviation policy dialogues were held with China. Also, in October of the same year, at the 49th Conference of Directors General of Civil Aviation Asia and Pacific Regions, in addition to evaluating aviation safety issues and measures, opinions were exchanged on the current situation of air traffic control and future plans.

(9) Logistics Center

Based on agreements reached at the 4th China-Japan-Korea Ministerial Conference on Transport and Logistics held in July 2012, trilateral cooperation between Japan, China, and South Korea is being promoted to advance mutual transit of chassis, strengthen the Northeast Asia Logistics Information Service Network (NEAL-NET), standardization of pallet quality and cargo handling machinery dimensions, etc.

(10) Survey and Mapping Sector

In addition to actively participating in UNCE-GGIM^{Note 1} and contribution to the establishment of a global-scale geodetic reference system, for the promotion of the Global Map Project,^{Note 2} technical assistance to developing nations to develop Global Map V.2 and promotion activities through venues such as Rio+20^{Note 3} are being implemented.

In addition to serving as the Secretary of the UN-GGIM-AP,^{Note 4} the monitoring crustal movements with the cooperation of relevant nations is being promoted. Aside from this, GSI participated in the 10th UNCSGN^{Note 5} as well as the 18th IHC^{Note 6} as government representatives to discuss geographical names. Since the 6th UNCSGN, Republic of Korea and others are insisting on repeating claims to "either rename the Sea of Japan as the East Sea or list both names." MLIT along with the Ministry of Foreign Affairs and other relevant ministries are working together to promote the correct understanding and support of the name "Sea of Japan."

(11) Meteorological and Earthquake/Tsunami Sector

Under the framework of the World Meteorological Organization (WMO), in addition to the mutual exchange of meteorological observation data and technological information, information on typhoons and climate utilizing our nation's technology is provided to various countries to cooperate with the implementation and promotion of meteorological services of the world. Also, under the framework of United Nations Educational, Scientific and Cultural Organization/Intergovernmental Oceanographic Commission (UNESCO/IOC), tsunami information regarding the northwest Pacific Ocean (Northwest Pacific Tsunami Advisory) is provided by the Northwest Pacific Tsunami Advisory Center of the Japan Meteorological Agency (JMA/NWPTAC) to various countries in the region to contribute to the tsunami disaster mitigation of coastal countries.

(12) Research Sector

In anticipation of spreading our nation's superior infrastructure-related technology to Asian nations, based on the research coordination roadmap with Vietnam, Indonesia, India, and others, specifications for construction technology such as environmental pavements modified to better suit local conditions are being jointly developed, joint workshops are being hosted, and coordination with locally dispatched JICA experts as well as exchanges with mid-level and young researchers are being promoted.

Note 1 United Nations Committee of Experts on Global Geospatial Information Management

Note 2 A project in which a fundamental geospatial information database (Global Map data), needed for analyzing global environmental issues, is developed under the voluntary cooperation of the national geospatial information authorities of various countries around the world.

Note 3 An alternate name for the "United Nations Conference on Sustainable Development" held in Rio de Janeiro in June 2012, which marked the 20-year anniversary since the Rio Earth Summit held in 1992.

Note 4 Regional Committee of United Nations Global Geospatial Information Management for Asia and the Pacific

Note 5 United Nations Conferences on the Standardization of Geographical Names

Note 6 International Hydrographic Conference

(13) Coast Guard Sector

Coordination and cooperation between various coast guard organizations in a variety of fields is being actively promoted for search and rescue and maritime security measures through the North Pacific Coast Guard Forum (the six countries of Japan, Canada, China, South Korea, Russia, and United States) and 6th Heads of Asian Coast Guard Agencies Meeting (17 Asian countries, one region) as well as bilateral high-level meetings and joint training with Russia, South Korea, and India along with international contributions through international organizations such as the International Maritime Organization (IMO), International Hydrographic Organization (IHO), Cospas-Sarsat Council, and International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA).

Column**“Alexander Dalrymple Award” Awarded to Our Country for the First time in Asia**

Dr. Hideo Nishida, formerly Head of the Japan Hydrographic and Oceanographic Department, Japan Coast Guard (active period: April 2002-March 2004) was awarded the “Alexander Dalrymple Award” which is an award for individuals who have made substantial contributions to the safety of navigation through the creation and dissemination of hydrographic charts on October 2, 2012 by the United Kingdom Hydrographic Office in London.

This award is named after Alexander Dalrymple, the first Chief Hydrographer to the Admiralty Board of the UKHO in the late 18th century, and was adopted to commemorate “World Hydrographic Day” (June 21) by the UN General Assembly in 2006. Six people, one person every year, famous in the field of hydrography for creating hydrographic charts have been awarded so far (from UK, UK, Germany, South Africa, France, and the United States in awarded order) and Dr. Nishida is the first from Asia to receive the award.

When Dr. Nishida was working at the Japan Hydrographic and Oceanographic Department he worked hard on initiatives to improve the ability of emerging nations, mainly in Asia, to create hydrographic charts. This award was given for these efforts and the contributions to ensuring safe navigation.

Also, in giving this awarded the United Kingdom Hydrographic Office mentioned the role played by the Japan Hydrographic and Oceanographic Department in responding to the Great East Japan Earthquake for securing the transport route for emergency supplies to the disaster stricken area from sea and the role played by Dr. Nishida in this process, showing the world the importance played by hydrographic department in disaster recovery.

The United Kingdom leads the world in the maritime sector as well as the hydrographic field and currently British hydrographic charts are used by 70% of international seafaring ships. When our nation established the Hydrographic Office (the current Japan Hydrographic and Oceanographic Department) in 1871, it was founded on technical instruction from the UK. The fact that hydrographic efforts of our nation that began with the technical instruction from the UK are now being highly praised by the UK, a great maritime nation is both deeply moving and meaningful. This award represents a great deal of encouragement for those at MLIT engaged in the technical field and hydrographic duties will continue to be promoted for the safety of the sea and aiming for greater technical progress with a global perspective.

The recipient Dr. Hideo Nishida, former Head of the Japan Hydrographic and Oceanographic Department (right) and UKHO Chief Executive, Ian Moncrieff CBE (left)



Source) Japan Coast Guard

Training Session While Looking at Hydrographic Chart

Source) Japan Coast Guard

Section 4 Initiatives towards international standardization

(1) Globalization of vehicle standards and certification systems

In order to quickly and cheaply disseminate safe and environmentally friendly vehicles, Japan actively participates in the World Forum for Harmonization of Vehicle Regulations of the United Nations Economic Commission for Europe (UNECE/WP29) to promote international harmonization of safety and environmental standards, and to globally disseminate new Japanese technology through such activities. To promote these activities, in accordance with the “Action Plan for the Internationalization of the Regulation and Certification System for Vehicles” drawn up in June 2011 through high-level meetings over the Internationalization of the Regulation and Certification System, which consists of representatives from both the government and people, Japan works to ① conform Japanese specifications and technology to worldwide standards, ② collaborate between Asian nations, ③ realize mutual certification worldwide, ④ develop systems accommodating the globalization of standard certification, and is promoting the globalization regulation and certification system for vehicles.

(2) Initiatives for international standardization in railways

As Europe actively promotes the international standardization of European specifications, accommodating international standardization is a vital task for globally expanding Japanese railway systems. Global standardization must be accommodated to avoid serious affects to the railway industry such as the possibility of existing domestic specifications being eliminated because of withdrawal of superior Japanese technology from global standards. Therefore at the Railway Technology Standardization Committee, experts with relevant knowledge and experience on railway technology and related industries collaborate and actively undertake discussions over strategies for international railway standards and domestic standard policies concerning international standards.

In 2012, a Japanese individual was inaugurated as chairman of the technical committee for railway applications (TC269) of the International Organization, for Standardization which was established in April, and achieved to induce having the 2nd Plenary Meeting in Japan.

In September of the same year, for the further global expansion of Japanese railway systems, the National Traffic Safety and Environment Laboratory received certification from the International Accreditation Japan (IA Japan) of the National Institute of Technology and Evaluation (NITE) as the first certification institution in Japan in railway field.

(3) Initiatives for the international standardization related to ships and crewmen

International maritime transport businesses are operated by ships and crewmen of various nationalities and must undertake operation under fair and equal competitive conditions in accordance to internationally unified rules. In the past, Japan has actively participated in the formulation of international standards concerning ships and crewmen -such as the SOLAS Treaty, MARPOL Treaty, STCW Treaty, etc.- and has contributed to their establishment. In 2012, the guideline regarding the International Ship Recycling Convention for the safe and environmentally sound dismantling of ships was formulated under the leadership of Japan.

(4) International harmonization of certification systems, and civil engineering and building standards

In recent years, Japan is undertaking initiatives to promote the international harmonization of certification systems as well as civil engineering and building standards. Such initiatives include implementing systems for the certification of function authorization and evaluation institutions for construction materials from foreign countries used in the fields of civil engineering, building and housing (where globalization of the market is expanding), implementing policies such as providing technical support by JICA, and participating in the formulation of engineering and technical standards by the ISO. In addition, Japan is coming up with measures for accumulated Japanese technologies that reflect international standards and proceeding with deliberations over developing and amending domestic technical standards in consideration of development trends in international standards.

(5) International standardization of intelligent transportation system (ITS)

Seeking for efficient application development, global contribution and growth of relevant domestic industries, the international standardization of ITS technology in international standardizations institutions such as the ISO or International Telecommunication Union (ITU) is being pushed forward.

In particular, Japan participates in the advisory committee (ISO/ TC204) for the international standardization of the ITS, and is promoting the global standardization of SmartWay as well as working to harmonize ITS in cooperation with western governments. In addition, the Japan is undertaking activities aiming to work out international standards concerning Advanced Safety Vehicles (ASV) in the World Forum for Harmonization of Vehicle Regulations (UN/ECE/WP29).

(6) Standardization of geographic information

Aiming to secure compatibility in the mutual use of the Geographic Information System (GIS) with different geospatial information, Japan actively participates in ISO Technical Committee (ISO/ TC 211), Geographic information/Geomatics, for the formulation of international standards.

(7) Mutual recognition of engineers' qualifications with overseas nations

The APEC Engineers' Qualification Mutual Approval Project promotes the transferability of qualified engineers through the mutual approval engineers' qualifications between participating nations and regions. As for the APEC Architect Project (architect registration system), Japan signed the "APEC Architect Bilateral Agreement on Reciprocal Recognition of Registered/Licensed Architects in Japan and Australia" in July 2008 and the "APEC Architect Memorandum of Cooperation on Registered/ Licensed Architects in Japan and New Zealand" in July 2009 to enhance the transferability of qualified construction engineers between the countries.

(8) In the field of sewerage

Based on the "Intellectual Property Strategic Program 2010 (established May 21, 2010)", Japan is proceeding with strategic international standardization in the field of sewerage to create an international market where Japanese enterprises striving for international expansion can fully exert their highly competitive abilities. Currently, Japan is actively participating in the formulation of ISO international standards in fields such as advisory committees related to recycling water for irrigation (ISO/PC253), fields in asset management (ISO/PC252, ISO/TC224/WG6) and fields in crisis management (ISO/TC224/WG7). Additionally, Japan is deliberating international standards for using recycled water in cities in consideration of future ISOP standards that may be established.

Chapter 10

Utilizing ICT and Promoting Technology Research and Development

Section 1

Promoting Innovation in the Field of National Land and Transport Utilizing ICT

Policies are being promoted to create an advanced information communication network society beginning with the establishment of a safe and efficient next generation infrastructure in the field of national land and transport in coordination with the Cabinet Office Strategic Headquarters for the Promotion of an Advanced Information and Telecommunications Network Society (IT Strategic Headquarters) headed by the Prime Minister.

1 Promoting ITS

Intelligent Transport Systems (ITS), a system created through the integration of people, roads, and vehicles using the latest Information and Communications Technology (ICT), enables advanced road use, the safety of drivers and pedestrians, dramatic improvement of transport efficiency and comfort as well as solving various social problems such as traffic accidents and congestion, environmental problems, and energy problems and is leading to the creation of new markets in the related fields of the automotive industry and information technology industry among others.

Also, based on the “New Information and Communication Technology Strategy”, green ITS is being actively promoted which includes the introduction and development safe driving support systems which utilize information communication technology as well as the aggregation and distribution of a wide variety of road traffic information including real-time vehicle travel (probe) information for utilization in road traffic management as well.

① The Spread of ITS in Society and its Effect

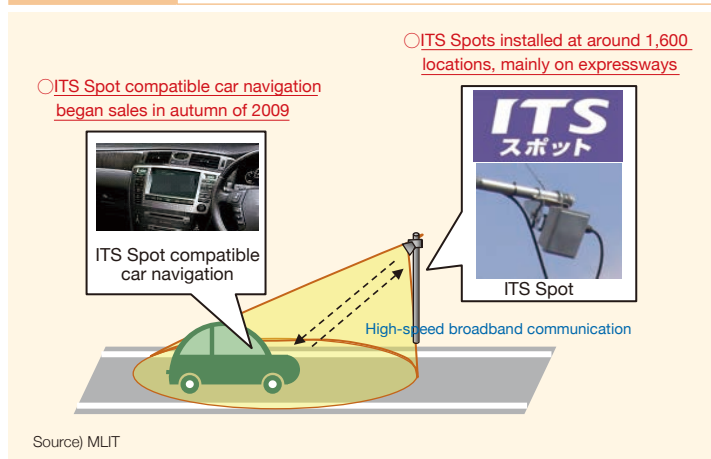
(a) Promotion of ETC and its Effects

Electronic Toll Collection (ETC) is now available on all domestic toll roads in Japan and the total number of new setup onboard devices is 40.52 million as of December 2012 and its usage rate on all national expressways is roughly 87.9%. Due to this, tollgate congestion that used to account for roughly 30% of expressway congestion causes is mostly relieved and contributes to reductions in CO₂ emissions and environmental burdens. Additionally, measures utilizing ETC such as Smart IC which is an ETC only interchange and discounts for ETC vehicles are being implemented and in addition to toll roads, its also possible for parking payments and boarding procedures for ferries, showing the spread and diversification of services utilizing ETC.

(b) Improvement of Providing Road Traffic Information and its Effects

Vehicle Information and Communication System (VICS) compatible onboard devices aim to advance travel route guidance and as of September 2012 roughly 35 million units have been shipped. By providing travel time, congestion conditions, traffic restrictions, and other real-time road traffic information, VICS improves driver convenience and contributes to better mileage that also leads to reducing environmental burdens including the reduction of CO₂ emissions.

Graphic II-10-1-1 Creating a Diversity of Services Through High-Speed Broadband Communication Between ITS Spots and Compatible Car Navigation



② Technological Development and Realization of New ITS Services

(a) Nationwide Deployment of Smartways

Industry, academia and government have been working together to further the Smartway project as the next generation of roads that connect people, vehicles, and roads with ITS technology for the purpose of traffic safety, traffic congestion measures, and environmental measures. As part of this effort, beginning in 2011 a variety of services are being offered nationwide through ITS Spots mainly installed on expressways.

Through ITS Spots and compatible car navigation systems, services such as car navigation, VICS, and ETC which used to be provided with separate onboard devices can now be provided as an all-in-one service, thus realizing the three basic services of dynamic route guidance, safe driving support, and ETC. Also, some device models are able to connect to the Internet to provide regional tourism information and in the future, digital cash payments for parking lots and other facilities, logistics support, and a variety of other services are expected to be offered. In addition, investigations are under way regarding route confirmations that contribute to the support of vehicle operations.

(b) Explorations for the Realization of Next Generation ITS

For the future, in addition to promoting the spread of ITS Spot services, efforts will focus on realizing safe, comfortable, and smooth road traffic by “connecting” roads and automobiles such as roads providing information regarding road traffic conditions to support and control appropriate automobile driving thus relieving traffic congestion as well as gathering information from automobiles on the travel route and utilizing it for road management. Also, for systems to realize automated driving on expressways, issues to realize this will be identified and studied; as part of this, technical and safety aspects are being studied with operation tests using Adaptive Cruise Control (ACC) through public-private partnerships.

(c) Promotion of the Advanced Safety Vehicle (ASV) Project

Regarding the ASV promotion plan, efforts are under way for the development, commercialization, and widespread adoption of Advanced Safety Vehicles (ASV) that enable drivers to drive safely by using advanced technology such as ICT technology. Currently investigations are under way to promote the development of communication type safe driving support systems and in March 2012 a guideline was drafted for vehicle-to-vehicle communication systems that use communication. Also, investigations were initiated for the commercialization of pedestrian-vehicle communication systems.

Graphic II-10-1-2 Illustration of Vehicle-to-Vehicle Communication Systems (Advanced Safety Vehicle - ASV)



Source) MLIT

2 Realizing a Society that Utilizes Geospatial Information Sophisticatedly

In order to utilize position and location information or “geospatial information”^{Note 1} in a more sophisticated through ICT, following the “Basic Plan for the Advancement of Utilizing Geospatial Information” enacted by Cabinet Decision on March 27, 2012, initiatives are being promoted to realize a “G-Spatial Society (Society Sophisticated Utilization of Geospatial Information)” where anyone is able to utilize necessary geospatial information anytime and anywhere.

(1) Maintaining and Updating Geospatial Information as the Foundation of Society

The Digital Japan Basic Map^{Note 2} and Fundamental Geospatial Data^{Note 3} which can be used as the basis for utilizing

Note 1 Information indicating a specific place on space or the position of an area (including information on the point in time regarding this information) as well as information pertaining to this information. Also called Geospatial information.

Note 2 Newly digitally electronically compiled maps that serve as our nation's basic maps instead of the traditional paper maps including the 1:25,000 scale topographic maps. In addition to depicting our national territory appropriately, it serves as the most fundamental information of our national land's conditions and this geospatial information is developed by the Geospatial Information Authority of Japan.

Note 3 Serves as a reference for the position determined for geospatial information on the digital map such as location information for the geodetic control point, coastlines, boundaries of public facilities, and administrative boundaries. Criteria and standards are defined by ministerial ordinances of MLIT. The Geospatial Information Authority of Japan carried out the preliminary development by FY 2011 and it is currently being updated along with the Digital Japan Basic Map.

various geospatial information is being rapidly developed and updated with the coordination of various administrative organizations. Also, various types of information regarding national land are being developed such as aerial photographs, geographical name information, national land numerical information, and continuous monitoring of crustal movements with the GNSS-based control stations. Additionally, a framework is being developed to make it possible to quickly grasp and provide information on national land such as gathering parameters to correct reference points and location information for reconstruction following the Great East Japan Earthquake, developing maps and elevation data, development of information that will serve as a foundation for the development of hazard maps in preparation for future disasters such as landform classifications, and emergency aerial photography following a disaster.

(2) Initiatives to Promote the Utilization of Geospatial Information

Most of the geospatial information developed is widely available through the Internet. Also, the Digital Japan Web System^{Note} is being functionally upgraded to allow for combination with various other information on the web and also initiatives by industry, academia, and government to further promote general sharing and mutual usage is also being supported. Also, guidelines are being developed and publicized regarding the handling of private geospatial information on individuals and the promotion of secondary usage; additionally, industry, academia, and government worked together to host the “Geospatial EXPO 2012 Japan” in June 2012 to raise public awareness and create new industries and services.

3 Realizing an Electronic Government

Following the “New Strategy for Information Communication Technology”, various initiatives to realize an electronic government are being implemented. In particular, regarding online usage, initiatives are being taken for the goal of improving the efficiency of government services through the reevaluation of the scope of online usage based on reforming operating processes and evaluating cost-benefit ratios.

(1) One-stop Services for Car Ownership Paperwork

A one-stop service for electronic applications in addition to over-the-counter applications for automobile inspections and registration, automobile parking space certification, and the paying of taxes such as the automobile weight tax is being promoted with the coordination of relevant offices and ministries. Regarding the new registration of new automobiles, it is already implemented in ten prefectures and initiatives are being taken to expand it to more procedures and regions.

(2) Utilizing ICT for Public Works Procurement Procedures

MLIT (then known as the Ministry of Construction) created the “Basic Vision for Construction CALS Development” in 1996 and divided the period up to 2010 into short-term, mid-term, and long-term and formulated a CALS/EC action plan for each phase and promoted the computerization of various information regarding public works as well as the efficient exchange, sharing, and coordination of information between the contractor and contractee.

In 2003, MLIT began full implementation of electronic bidding for all directly managed projects and in 2004 began full implementation for electronic delivery for all directly managed projects as well thereby achieving the utilization of ICT for most procurement procedures.

In the future, notwithstanding the scope of CALS/EC, initiatives for the utilization of ICT for the computerization of a wide array of construction production systems and improved efficiency will continue to be promoted.

4 Development and Opening of Optical Fiber for the Management of Public Facilities and Its Housing Space

In order to further the creation of the world’s most advanced information and communications network in response to the “e-Japan Priority Policy Program”, the development and opening of optical fiber for the management of public

Note A system to realize Digital National Land (National Land replicated on computers), display a variety of layered geospatial information with the Digital Japan Basic Map as the background and allow for local government to share information as well as enable individuals and businesses to conveniently broadcast information.

facilities and its housing space was promoted.

Optical fiber for the management of public facilities serve the purpose of making the management of public facilities more efficient as well as fast and stable provision and sharing of large capacity data and is being developed in rivers, roads, ports, and sewage. The optical fiber managed by the nation for the management of rivers and roads is open to private sector businesses within a scope that does not interfere with facility management and in FY 2012 roughly 18,000km were open to applications for those seeking usage.

5 Sophisticated Water Management and Water Disaster Prevention Utilizing ICT

In light of new developments in information technology of recent years, new technology is being applied to the field to further the sophistication of water management and water disaster prevention.

For the monitoring of rivers and river basins, remote sensing and other new monitoring technology as well as surveying and observing with cutting edge image recognition technology is being promoted. For example, the development of the new radar network XRAIN (MLIT X-band polarimetric (multi parameter) Radar Information Network) which enables more detailed and real-time rainfall observation is being developed and regarding the observation of flow volume and water level the ADCP (Acoustic Doppler Current Profiler - which is an anemometer that uses the Doppler effect. Graphic II-10-1-3 Diagram 1) and image analysis using CCTV images and other new technology are being implemented and applied.

Also, in addition to obtaining high precision topographic data through aerial photography, MMS (the Mobile Mapping System) is also being promoted to obtain a 360-degree river view from river banks in order to gain prehension of conditions inside and outside river channels and enable imaging actual places through CCTV images. In respect of basin observation, aerial laser profiling (LP) is implemented to obtain highly accurate wide-area digital elevation data.

The information obtained through these such as rain volume, water level, and high precision topographical data are integrated into flood simulations and risk assessment using the “Distributed Rainfall-Runoff Model”, an advanced flood prediction model to further crisis management (Graphic II-10-1-3 Diagram 2). In addition, a model to visualize the flow of underground water three-dimensionally based on data such as topography, geology, and surface water is being created. The results will be used for the evaluation of future underground water management policies regarding the regions of Chikugo and Saga Plains under the land subsidence prevention guidelines.

Regarding the monitoring of sediment disasters that occur due to heavy rains, rainfall volume radar that can assess the rainfall conditions of a wide area, a large-scale sediment movement detection system that can estimate the location of the origin of the sediment disaster from the vibrations caused by the sediment disaster, and satellite image analysis to confirm the collapse position and estimate the scale will be utilized to rapidly assess sediment disasters and the development of a large-scale collapse monitoring and warning system (Graphic II-10-1-3 Diagram 3).

In the field of sewage, for the sake of disaster prevention and mitigation against concentrated heavy rains and other disasters in the underground spaces where advanced urban functions are concentrated, the creation of effective evacuation

Graphic II-10-1-3 Examples of ICT Utilized for Sophisticated Water Management and Water Disaster Prevention

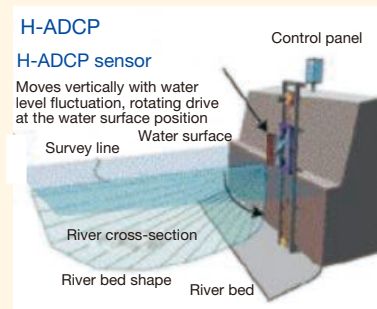


Diagram 1 Discharge observation with ADCP

Source) NEWJEC Inc.

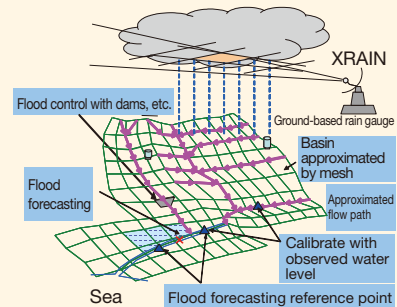


Diagram 2 flood prediction by distributed hydrological model

Source) MLIT

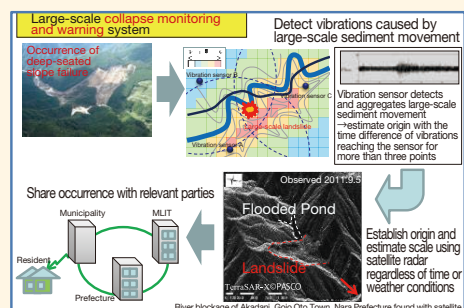


Diagram 3 Large-Scale Collapse Monitoring and Warning System

Source) MLIT

plans that utilize flooding and evacuation simulations and effective information transmission and evacuation guidance using ICT technology is being investigated.

Section 2 Promoting the Research and Development of Technology

1 The Position of Technological Research and Development in Technology Policies and Comprehensive Promotion

MLIT formulated the Third MLIT Technology Basic Plan that covers the planning period from 2012 to 2016 that indicates the basic direction of technology policy and defines important initiatives including the promotion of technological research and development and the effective use of technology as well as the fostering of human resources to support technology policies. The plan indicates three areas for initiatives regarding technological research and development, “ensuring safety and comfort”, “establishing national land and regions that are sustainable and vibrant, stimulating the economy”, and “creating a common platform to support the promotion of technological research and development” and based on this, various bureaus of MLIT headquarters, facilities and other organizations, special organizations, regional development bureaus, and external bureaus among others are engaged in promoting technological research and development. Also, regarding the formulation of policies, cross-sectional discussions were held at the National Land and Transport Technology Conference consisting of the Technology Group of the Subcommittee on Transport Policy, Council for Social Infrastructure as well as parties from MLIT and research institutions.

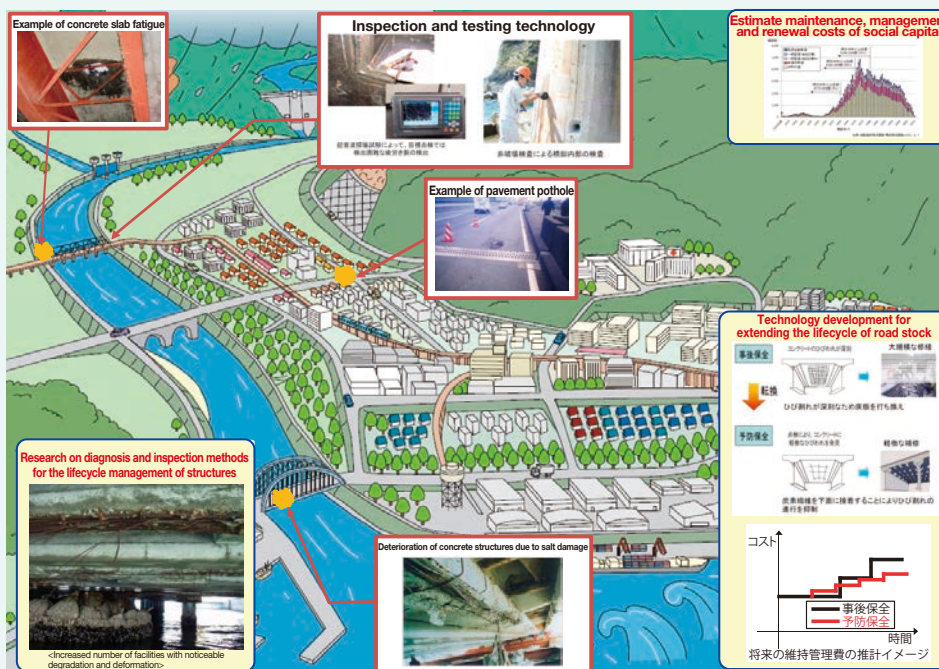
Regarding the implementation of technological research and development, the coordination framework of industry, academia and government must be further enhanced while furthering it in a multi-disciplinary and integrated manner then actively reflecting the results in public works as well as the construction and transport industry.

Column

Formulating the Third MLIT Technology Basic Plan - New Technology Development for the Maintenance, Management, and Renewal of Social Capital -

In December 2012, the Third MLIT Technology Basic Plan was formulated as a plan to support overall national land and transport policies such as the Priority Plan for Social Infrastructure Development.

Key Project Example: Social Capital Maintenance, Management, and Renewal Project



Source) MLIT “Third MLIT Technology Basic Plan”

The plan establishes seven priority projects of especially high priority that will be tackled with a multidisciplinary approach. One of these is the “social infrastructure maintenance, management, and renewal project” calls for “the comprehensive evaluation of maintenance and management technology concerning social infrastructure and the clarification of maintenance and management technology that should be given higher priority for advancements including the utilization of private sector technology”, therefore these initiatives are being promoted for the planned increase of social capital lifecycle and ageing measures to prevent major accidents from happening.

Here we will present a case study for research and development, “the development of inspection and monitoring technology for preventive conservation management”. This technology development involved the development of technology that enabled the inspection of steel and other parts inside the concrete without destroying the structure as well as technology to efficiently inspect high places. In the future, field tests will be carried out at actual sites and initiatives for commercialization will be further promoted (Diagrams 1,2,3).

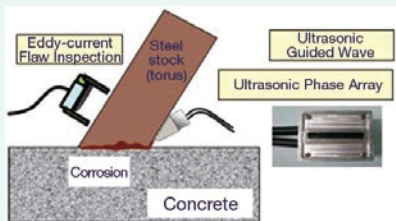


Diagram 1 Development of a method to confirm the corrosion or damages of the inside of steel parts using ultrasound and electric current
Source) MLIT

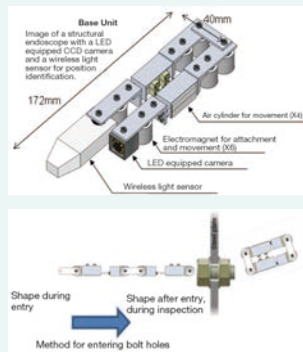


Diagram 2 Development of an endoscope to enter the inside from bolt holes to confirm conditions
Source) MLIT



Diagram 3 Development of a device to diagnose the outside wall by attaching itself to the building wall surface and moving around
Source) MLIT

(1) Initiatives at Facility Organizations, Special Organizations, External Bureaus, and Incorporated Administrative Agencies

Facility organizations, special organizations, external bureaus, and incorporated administrative agencies under MLIT which are mainly tasked with research are as shown in this figure. Incorporated Administrative Agencies serve the public interests and possess transparency and independence; research that meets policy needs are being conducted with priority and efficiency while striving for further coordination with relevant organizations including the private sector and carrying out tasks appropriately and efficiently.

Graphic II-10-2-1 Major Initiatives for FY 2012 by Facility Organizations, Special Organizations, and External Bureaus

Organizations, etc.	Summary
Geographical Survey Institute	Geospatial Information Authority of Japan At the Geography & Crustal Dynamics Research Center, Geospatial Information Authority of Japan, research and development that contributes to disaster prevention and the environment as well as the realization of a society that actively utilizes geospatial information in an advanced manner are carried out, such as estimating the fixed state of plate boundaries along with changes, assessing the impact of atmospheric turbulence to improve the reliability of monitoring crustal movements with GPS, and defining technical specifications and efficient ways to develop three-dimensional GIS data for public indoor spaces.
Policy Research Institute for Land Infrastructure and Transport	Policy Research Institute for Land, Infrastructure, Transport and Tourism Analyze socioeconomic trends and prepare a long-term outlook, implement surveys and research for new policy methods internally and externally, and other activities for the purpose of widely contributing to policy creation in the field of national land and transport.
National Institute for Land and Infrastructure Management	National Institute for Land and Infrastructure Management To contribute to the realization of a beautiful, safe national land with vitality, FY 2012, the following was implemented in addition to existing research, “crisis management for complex natural disasters and excess external force”, “evaluation methods and standards for seismic safety of the exterior material”, and “measures for smooth transport in response to expanded Asian ferry transport”.
Meteorological Research Institute	Meteorological Research Institute, Japan Meteorological Agency, conducts prediction research and research on understanding the phenomena of weather, climate, earthquake volcanoes, and the ocean to contribute to the “intensified measures for typhoon and torrential rains,” “intensified measures for disasters of earthquake, volcano, and tsunami,” and “intensified of measures for climate change and global environment issue.”
Japan Coast Guard	Japan Coast Guard conduct testing and research for equipment and materials used for coast guard duties, testing and research for forensic science at sea, and advancing observation technology for monitoring seafloor crustal movements.

Graphic II-10-2-2 Major Initiatives for FY 2012 by Incorporated Administrative Agencies with a Primary Focus on Research Under MLIT

Incorporated Administrative Agency	Summary
Public Works Research Institute	Public Works Research Institute Implemented research and development to contribute to the efficient creation of quality social capital and the development of Hokkaido such as “research on prevention, reduction, and early recovery from more intensified and divers natural disasters,” and “research on innovative technology for greener social infrastructure.”
Building Research Institute	Building Research Institute Implement research on technology regarding housing, architecture, and urban planning such as “advanced evaluation methods on the energy conservation performance of housing and architecture in preparation for strengthened application of energy conservation standards” and “advanced response evaluation technology for high-rise buildings against long-period ground motion.”
National Traffic Safety and Environment Laboratory	National Traffic Safety and Environment Laboratory Conducted security of air transport and land transport, technical standards conformity assessment of automobiles, and technical evaluations related to recalls, including “promoting the development and commercialization of next generation heavy vehicles,” and “survey on driving behavior of drivers when presented with pedestrian information from safe driving support systems enabled by communication.”
National Maritime Research Institute	National Maritime Research Institute Conducted research on ensuring the safety of marine transport, preservation of marine environment, marine development and advanced marine transport including, “research for advanced analysis technology for high precision reproduction of marine accident occurrence conditions,” “research on green evolution of ships that contribute to revolutionary technology to reduce the environmental burden,” and “research on advancing and developing a safety evaluation method on renewable marine energy production systems.”
Port and Airport Research Institute	Port and Airport Research Institute Conducted research and development that contributes to the creation of a safe and comfortable society, preservation and formation of a good coastal environment, and creation of an vital economic society such as “development of composite tsunami damage estimation technology for tsunami disasters and port recovery,” and “evaluation of making the inspection, diagnosis, and monitoring of port structures more precise through the use of non-destructive testing technology.”
Electronic Navigation Research Institute	Electronic Navigation Research Institute Implement research and development for advancing air traffic management systems such as “expanding the capacity of airways,” “expanding the processing capacity of congested airports”, and “safety and technology that connects air and land.”

(2) Regional Development Bureau Initiatives

Technical and Engineering Offices and Port and Airport Technology Investigation Offices coordinate with relevant offices in their jurisdiction for tests and research of civil works material and water quality, hydraulic tests and design for the effective and efficient development of facilities, development of environmental monitoring systems, and other matters for technology development as well as the utilization and promotion of new technology tailored to the region.

(3) Promoting Technological Research and Development in the Fields of Construction and Transport

Regarding important research issues concerning construction technology that are especially urgent, issues that involve a wide range of fields are taken up and the governmental departments take the lead with the coordination of industry, academia and government to implement research comprehensively and organizationally for the “comprehensive technology development projects” where in FY 2012, research and development is being conducted for a total of five issues including the “development of inspection and monitoring technology for the preventative conservation management of social capital.”

Also, for the transport field, technological research and development that contributes to ensuring safety, improving convenience, and protecting the environment are being promoted efficiently and effectively with the coordination of industry, academia and government and in FY 2012 the “promotion of comprehensive technology development for advances control and management systems in the field of transport” is being undertaken.

(4) Supporting Private Sector Technological Research and Development

To promote private sector investments in research and development, support is given through special tax treatment regarding experiment and research expenses.

(5) Promoting Public Invitation Type Research and Development Subsidy Systems

To promote technological innovation in the construction sector, for the “Construction Technology Research and Development Subsidy Program” that invites the public to make proposals for technological research and development that contributes to the sophistication and strengthening of international competitiveness of construction technology under MLIT’s authority, two types of public invitation are made, public invitations for technology development that solves policy issues (implementation in 2-3 years) and public invitations for technology development in response to earthquakes (implementation in 1-2 years) and in fiscal 2012, 14 new issues were adopted and 12 issues were carried over.

Also, in the field of transport, to establish new technology that contributes to the safety and environmental protection of transportation or the sophistication of transport services, the Japan Railway Construction, Transport and Technology Agency (Incorporated Administrative Agency) implements the “System for the Promotion of Basic Research in the Transport Sector”, and in FY 2012, eight continued issues were adopted. In order to implement technology development that contributes MLIT’s policy objectives in a more focused manner, this system will be abolished after FY 2012 and from FY 2013 and onward a new technology development promotion system for the traffic and transport sector will be implemented through MLIT.

2 Promoting the Utilization and Adoption of New Technology for Public Works

(1) New Technology Utilization System for Public Works

In order to actively utilize promising new technology developed by private sector businesses, a “new technology utilization system for public works, etc.” that utilizes the New Technology Information System (NETIS) is under operation. In FY 2012, there were four recommended technologies and fifteen runner-up recommended technologies chosen as innovative new technologies that will raise the level of technology concerning public works. Also, in the MLIT Technology Basic Plan formulated in December 2012, in rebuilding the system, the need for appropriate national involvement in accordance with the novelty and importance of the technology was emphasized.

(2) Supporting the Utilization of New Technology

To strive for the promotion of utilizing new technology for public works, price data for construction cost estimating, etc. are being created to contribute to practical procurement for new technology that is highly evaluated by experts for the effects of utilization and that the procuring office is considering the active utilization of.

Section 3 Improving Construction Management Technology

1 Improving Costing Technology for Public Works

For the purpose of ensuring the transparency of public works, various price data standards are made public. Also, from FY 2012, to improve the efficiency of cost estimation, the “construction package type cost estimation formula” is being implemented on a trial basis. Furthermore, in response to the no-bidder/over-budget issue of recent years, overhead cost corrections for road maintenance projects in large urban areas or costing formulas that allows the reflection of the bidders estimates in expected pricing is being test implemented. Also, from FY 2010 for the purpose of improving the reciprocity between the contractor and contractee, when there is a change to the contract amount, the unit prices and other matters for estimating the monetary amount or partial payments will be agreed upon by negotiations before hand for the purpose of facilitating smother negotiations following design changes or partial payments as part of the “total value contract and unit pricing agreement formula” being implemented.

To ensure the fairness and transparency of contracted public works, in accordance with the Public Works Cost Estimation Guidelines and Estimation Standards for the purpose of calculating appropriate expected price which consists of the Public Works Standard Work Unit and Construction Machinery etc., Rent^{Note} is used as a basis to set standard labor, materials, machinery and the amount needed as well as set various values for the calculation of machinery overhead per type of construction. The standard labor of public works changes in accordance with the social environment and changes in construction form or emergence of new construction methods or new construction types, so field studies need to be regularly conducted and for construction types where change is noted to swiftly reevaluate as necessary. Also, for construction machinery etc., rent, field studies are carried out for the construction machinery, etc., possessed by the contractor and the base value, maintenance and management costs, and operation costs are assessed for regular revisions.

Note Of the overhead necessary for the use of construction machinery, etc., the lifecycle costs including the amortization costs, maintenance and repair costs, and management costs of construction machinery, etc., are shown as monetary values per hour or per day.

2 CIM and BIM Initiatives

Initiatives to implement CIM (Construction Information Modeling) which aims to ensure the quality of public works and improve the environmental performance as well as reduce the lifecycle cost by taking advantage of ICT for the entire process of planning, research, design, construction, maintenance and management, and renewal by centralizing the various information on design, construction, negotiations, maintenance, and management as well as improving business operations. In FY 2012, ten directly managed projects from across the nation were selected as pilot projects and CIM was implemented for detailed design and investigations are under way for the implementation of CIM from both policy and technical aspects.

Also for government buildings services projects, it is expected that the efficient and effective utilization of BIM (Building Information Modeling) in the lifecycle of government facilities will contribute to ensuring the quality of government facilities, reduction of lifecycle costs regarding the development and maintenance of facilities, and contribute to customer satisfaction toward government facilities. For this reason, in FY 2010, three pilot projects for BIM utilization were begun and the effects and issues regarding BIM utilization are being evaluated.

Section 4 Technology Development for Construction Machinery and Mechanical Equipment

(1) Development and Supply of Construction Machinery

In order to carry out appropriate maintenance and management of rivers and roads managed by national government and quickly respond to disaster recovery, efforts are being made to implement machinery for maintenance and management as well as disaster measure machinery across the nation.

Also, in order to improve the efficiency, conservation of labor, and safety of construction associated flood control projects and road development projects, studies and research and development for construction machinery and construction are being undertaken.

(2) Improving the Streamlining and Reliability Maintenance and Management of Machinery

The construction of floodgate equipment for rivers and dams, weirs, and drainage pumps was furthered starting around 1965 and many of the facilities are becoming decrepit. For this reason, in addition to the time plan maintenance in accordance with the time passed and operating time since the equipment was installed, the concept of condition monitoring maintenance where the equipment's condition is monitored is implemented to ensure the reliability of the equipment as well as extend the lifecycle of the equipment will be aimed for. Additionally, technology development to extend the lifecycle and improve the reliability of machinery equipment will be furthered.

(3) Utilizing the Fruits of Construction Technology Development

In order to safely and swiftly carry out restoration work at disaster sites where the danger of secondary disasters such as large-scale floods, sediment-related disasters, and slope collapses, a hydraulic shovel that can be remotely controlled as well as taken apart and airlifted was developed and is deployed as machinery for disaster countermeasures.