

**WHITE PAPER ON LAND, INFRASTRUCTURE,
TRANSPORT AND TOURISM IN JAPAN, 2011**



Ministry of Land, Infrastructure, Transport and Tourism

WHITE PAPER ON LAND, INFRASTRUCTURE, TRANSPORT, AND TOURISM IN JAPAN, 2011
Ministry of Land, Infrastructure, Transport, and Tourism (MLIT)

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Preface

Our experience with the Great East Japan Earthquake and Tsunami (hereinafter called “the Disaster”) has changed “the shape” of our nation.

The extent of damage caused by the tsunami far exceeded our estimate and the devastating scene was shown not only throughout Japan but also around the world through media coverage and footage. This experience will certainly change public awareness and behavior in terms of disaster preparedness. In addition, the accident at the nuclear power plant will certainly change our energy policy and approaches taken to date.

Amid such changes in social structure as population decline, aging, and fiscal restraints as well as the need to deal with climate change and global environmental problems, the question is how we should promote building a sustainable, vigorous homeland and regions. Even though we have continually reviewed our methods, ideas, and initiatives for building homeland and communities, we need to recognize anew the most important mission of developing social infrastructure, which is “protecting public safety and security,” while working to reconstruct the areas afflicted by the Disaster. At the same time, we need to tackle such difficult issues as energy restraints that surfaced after the Disaster with a view to “building a sustainable, vigorous homeland and communities.”

Under the circumstances, in this edition of WHITE PAPER ON LAND, INFRASTRUCTURE, TRANSPORT, AND TOURISM IN JAPAN, we have decided to discuss “Shifts in the policies of land, infrastructure, transport, and tourism” in Section 1 of Part I. Planning reconstruction of the disaster areas will serve as a test on how we can promote building a sustainable, vigorous homeland and communities throughout Japan union is faced with population decline, aging, fiscal restraint, energy constraint, and natural disaster risks. With this recognition, in Section 2 we will cover specific directions of measures and policies as well as current approaches aimed at “building a sustainable, vigorous homeland and communities” that extend vertically (actual onsite work through policy making), horizontally (diversity of fields), and externally (cooperation with other ministries and agencies), for which MLIT’s onsite abilities, comprehensive power, and readiness will be maximized.

Then in Part II, developments in the policies of land, infrastructure, transport, and tourism in various fields are reported for each policy issue.

Chapter 1: Reconstruction from the Great East Japan Earthquake and Tsunami, (hereinafter called “the Disaster”) and shifts in the administration of land, infrastructure, transport, and tourism

Section 1: Reconstruction from the Disaster

1 Current situations of the Tohoku Region

A little more than one year has passed since the Great East Japan Earthquake and Tsunami, the unparalleled disaster, occurred and infrastructure and transport systems in the affected areas are now being restored, and at the same time reconstruction programs for new town building have started to move forward. The following is an overview of the current situations of the Tohoku region including the affected areas.

(Decline in population)

In the three prefectures of Iwate, Miyagi, and Fukushima that were severely damaged, in addition to the 18,870 people killed or missing, the net number of people moving out of these prefectures (population outflow minus population inflow) stands at 41,216 (approximately four times over the same period of the previous year) and the population decline including people killed in the Disaster totals approximately 61,000. Out of the above population outflow determined through address changes on the Basic Resident Register, more than 30,000 people moved out of Fukushima Prefecture but according to a survey conducted by the Prefecture, 62,736 people moved out of Fukushima, which indicates that many evacuees have not changed their addresses on the Register.

The net outflow of people from the three Prefectures right after the Disaster was substantial but in Iwate and Miyagi, the population inflow continued between July 2011 and February 2012. In Fukushima, the outflow is still continuing even though the margin has narrowed. In March 2012, the three Prefectures fell back into a net outflow.

Chart. 1

Population decline in Iwate, Miyagi, and Fukushima Prefectures

(Unit: persons)

	Dead or missing (as of 12/4/4)	Disaster-related dead (provisional) (as of 12/3/31)	Net outflow of people (note) (11/3-12/2)
Iwate	5,908	193	3,179
Miyagi	11,143	636	5,469
Fukushima	1,819	761	32,568
Total	18,870	1,590	41,216

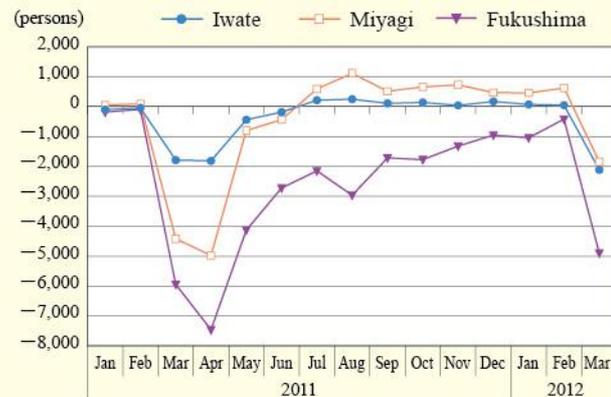
Note: Difference in number of outflowing people and inflowing people. As this is based on the “Report on demographic shift of the Basic Resident Register” (of the Ministry of Internal Affairs and Communications), evacuees who have not changed their addresses on the Register and foreign nationals are not included.

2) According to the three prefectures’ surveys (as of 12/4/5), people outflowing from the prefectures totaled 62,736 for Fukushima, 8,462 for Miyagi, and 1,575 for Iwate, respectively.

Source: Dead or missing (data of National Police Agency), disaster-related dead (data of Reconstruction Agency), outflowing people (Report on demographic shift of the Basic Resident Register” of the Ministry of Internal Affairs and Communications)

Chart. 2

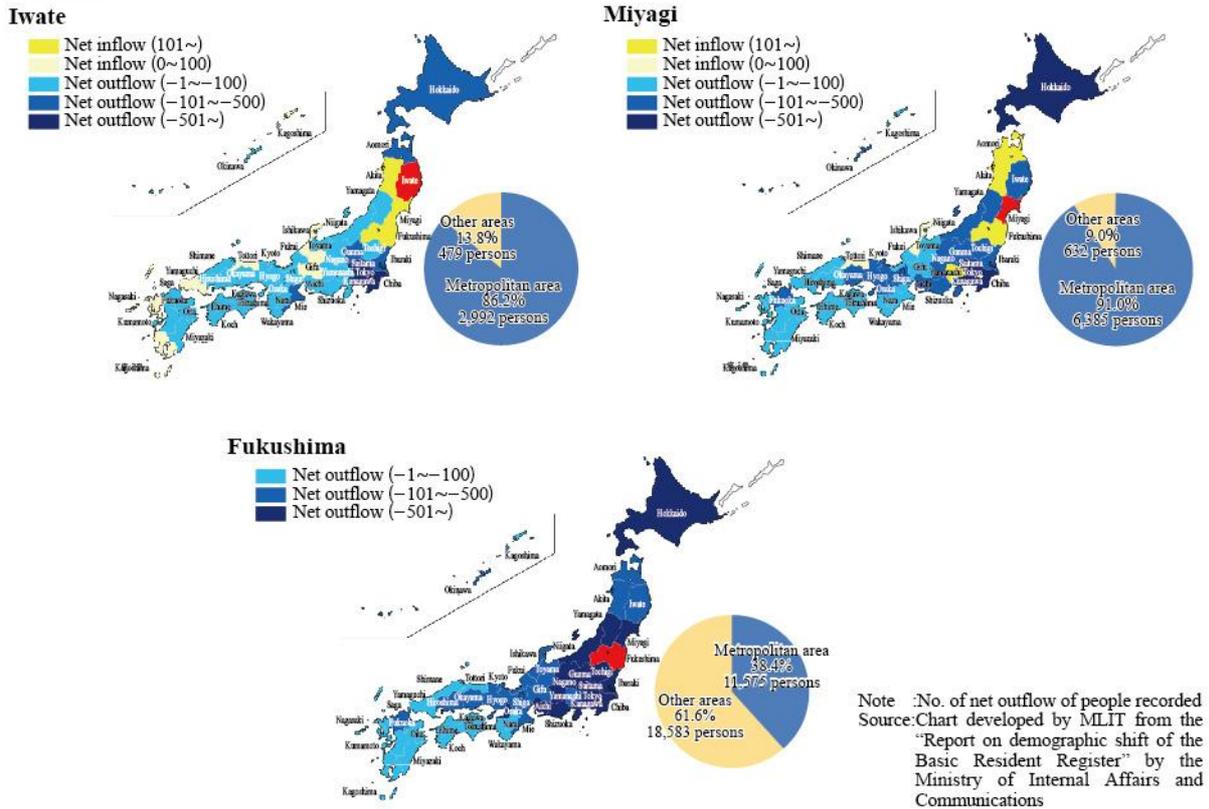
Trend in net outflow of people from Iwate, Miyagi, and Fukushima Prefectures



Source: Developed by MLIT from the “Report on demographic shift of the Basic Resident Register” by the Ministry of Internal Affairs and Communications

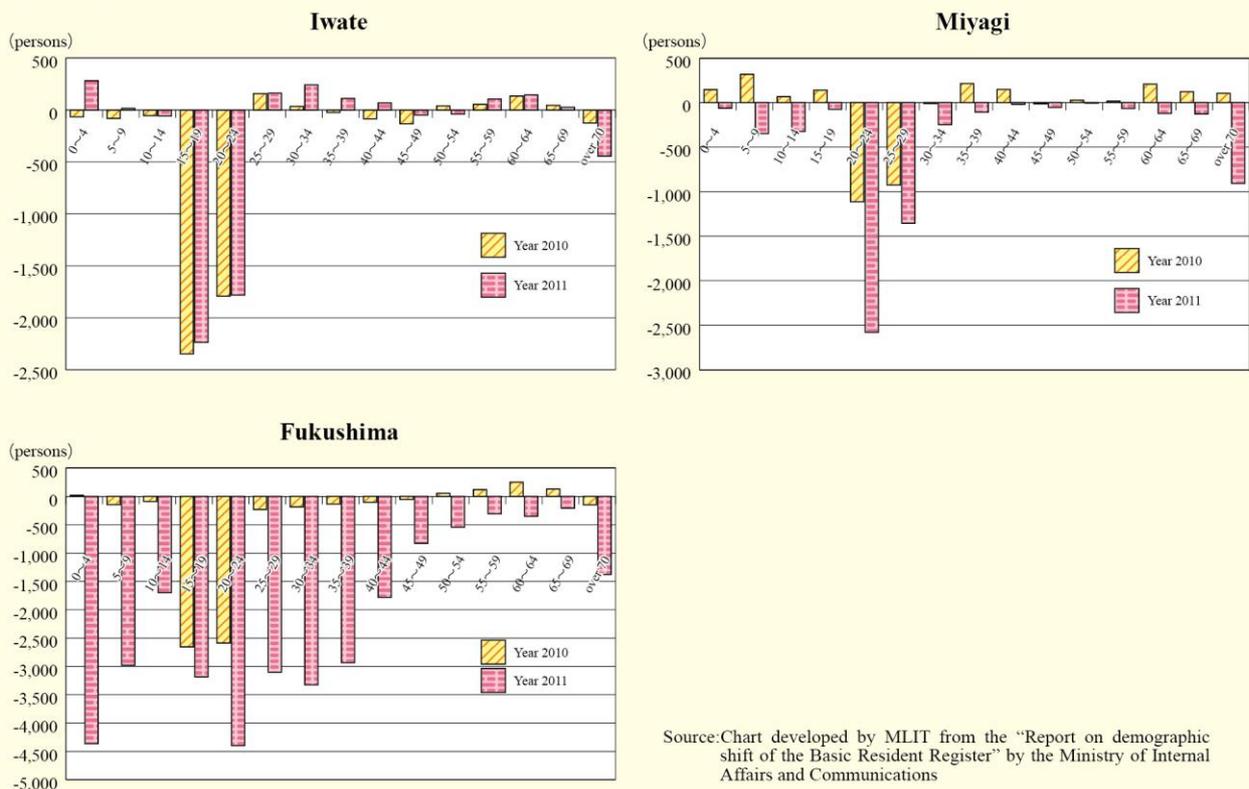
As to where people who left the three Prefectures during the period from March through November 2011 have gone, a large number of those leaving Iwate and Miyagi have moved to the metropolitan area -Tokyo and three neighboring prefectures- (86.2% for Iwate, 91.0% for Miyagi) but in the case of Fukushima, people have moved out to various parts of the country and those who have come to the metropolitan area account for a relatively small percentage, 38.4%, of the total.

Chart. 3 Where people outflowing from Iwate, Miyagi, and Fukushima went (March to November, 2011)



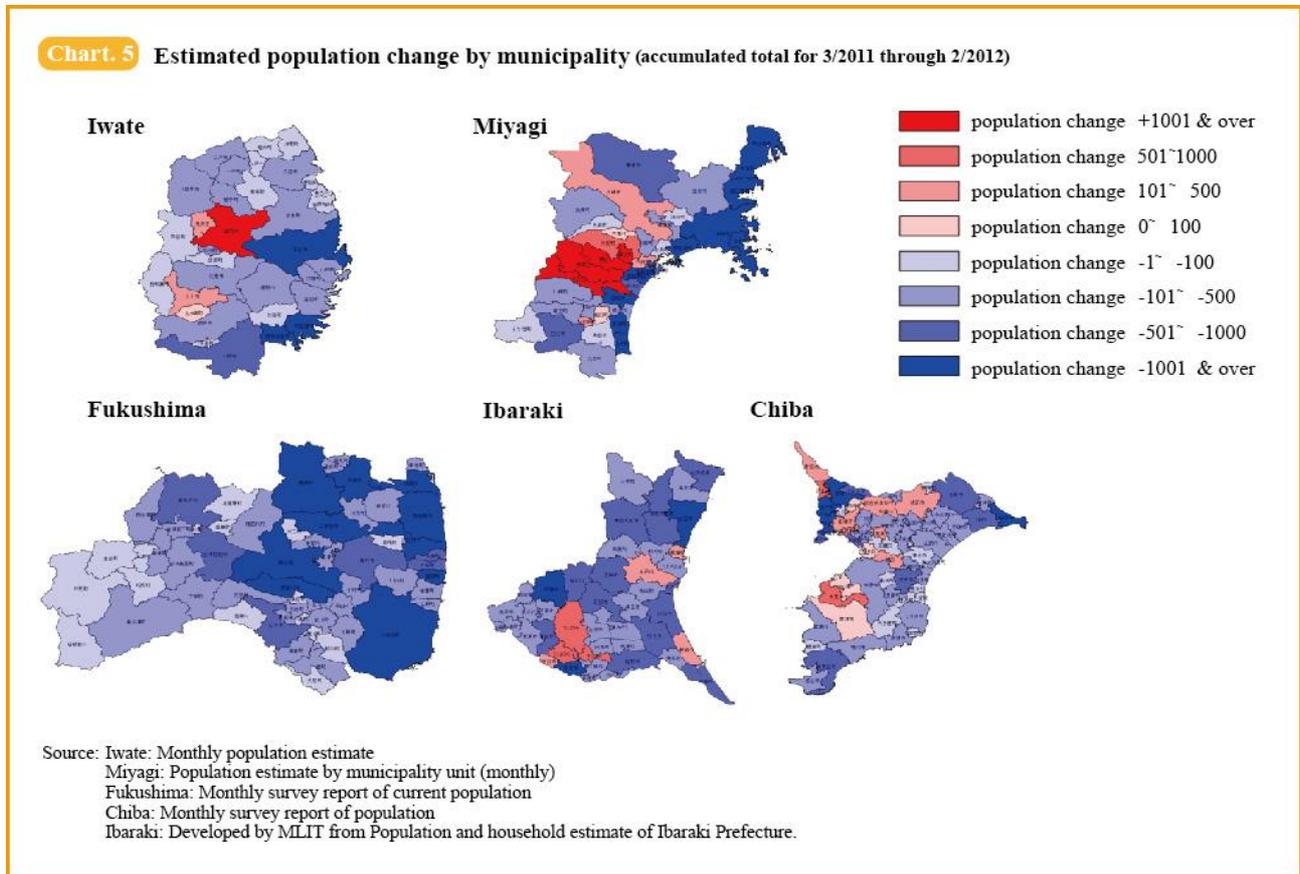
The net inflow and outflow of people in the three Prefectures during 2011 broken down by age bracket show that the outflow of young people in their 20's sharply increased in Miyagi Prefecture, and the outflow of people aged between 0 through 14 and those aged between 25 through 44 sharply rose in Fukushima Prefecture. Iwate Prefecture shows a high number of outflowing people aged between 15 and 24 but this is a trend noted even prior to the Disaster.

Chart. 4 Net outflow of people by five-year age bracket



A closer look at the situations of Iwate, Miyagi, and Fukushima shows that while the population continued to decrease in coastal areas hit hard by the tsunami, the population increased in Morioka City and Sendai City (up 7,080 people in Sendai and up 1,349 in Morioka between March 2011 and February 2012). It is presumed that some of the disaster victims from affected coastal areas and Fukushima Prefecture have moved to core cities and their vicinities of the two Prefectures.

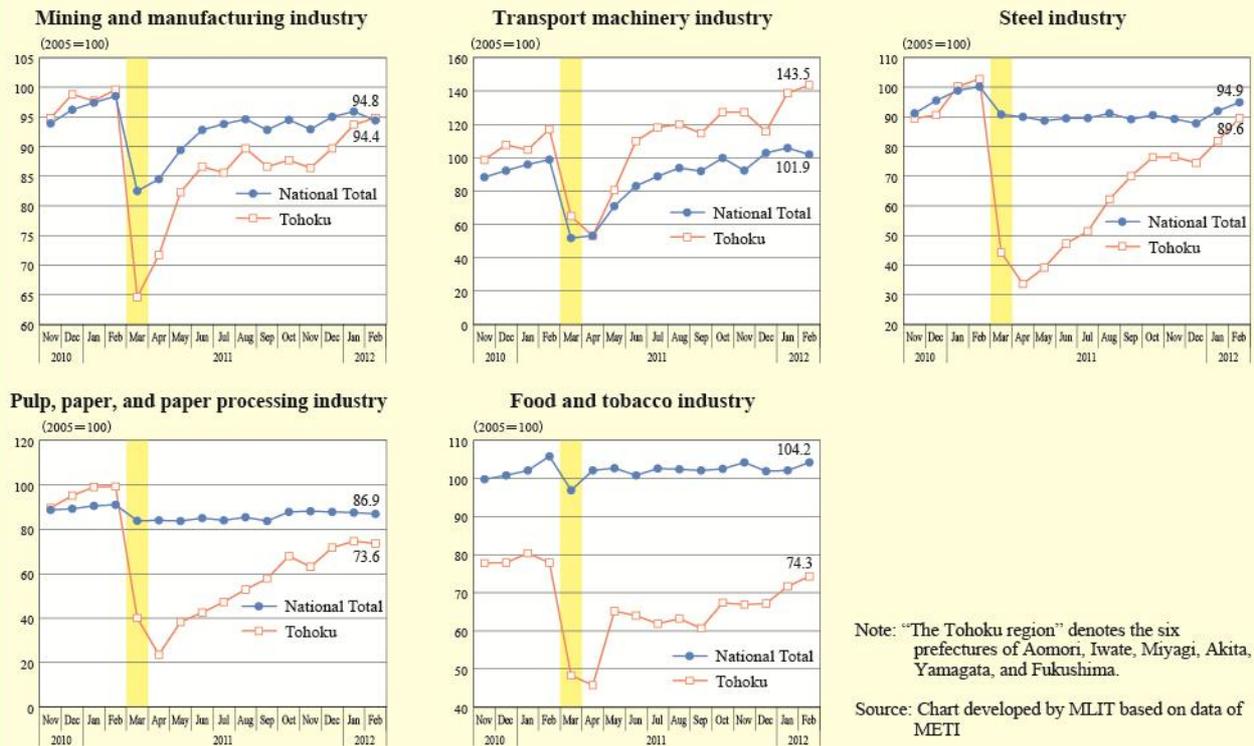
In the case of Chiba Prefecture, the net outflow of people- particularly from parts of the Keiyo area along Tokyo Bay hit hard by the liquefaction – occurred in 2011 for the first time in the 55 years since 1956. In Ibaraki Prefecture, which was also damaged by the liquefaction, the net outflow of people occurred for the first time in the three years since 2008.



(Production is generally on a recovery path but still stagnated in some sectors)

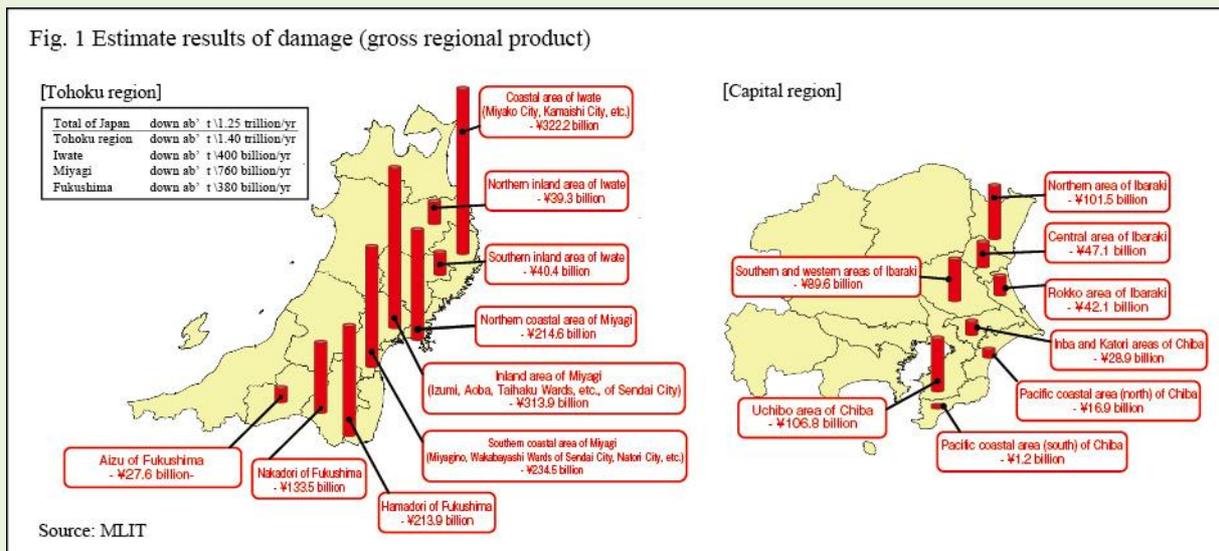
In the Tohoku region, the economy is still in a harsh condition due to adverse effects of the Disaster but is gradually recovering. Mining and manufacturing output in the region sharply dropped after the Disaster as compared with other regions, and while it is still below the pre-Disaster level, a gradual upward trend is seen, supported by such factors as moves to make up for reduced output after the Disaster and rebuilding of industries afflicted by the Disaster. The transportation equipment industry experienced a sharp drop nationwide mainly due to the effects of disrupted automotive supply chains but in June 2011, the industries in the affected areas rebounded to the pre-Disaster level ahead of those in other parts of the country. The steel industry and the pulp, paper, and paper processing industries, whose production activities were halted just after the Disaster, have started to show signs of recovery with the restoration of their production equipment situated along the Pacific seacoast. However, production levels of the food and tobacco industries still remain low.

Chart. 6 Changes in mining and manufacturing output indexes in the Tohoku region



Column Estimate of damage caused by the Disaster

Negative effects on production activities caused by the Disaster were not confined to the affected areas but spread nationwide. MLIT developed a region-by-region estimate on spillover effects due to reduction of capital income (flow income gained from capital stock that equals to sum of operating excess and allocation of capital depletion on the industry –related chart) caused by the Disaster in an economic model based on certain assumptions.



The results show that in terms of gross regional product, there was a nationwide decrease of some ¥1.25 trillion (down 0.25%) and broken down by prefecture, significant decreases were noted in the order of Miyagi, Iwate, Fukushima, Ibaraki, and Chiba. By area, the coastal areas of Iwate Prefecture (down ¥322.2 billion or some 48%) registered the largest loss, followed by the inland areas of Miyagi Prefecture (down ¥313.9 billion or some 10%) and the southern coastal areas of Miyagi Prefecture (¥234.5 billion or some 6%) (See Fig. 1). Except the affected areas (Iwate, Miyagi, Fukushima, and Chiba Prefectures, for

(Consumption trending upward, partly with positive effects from Disaster-related demand)

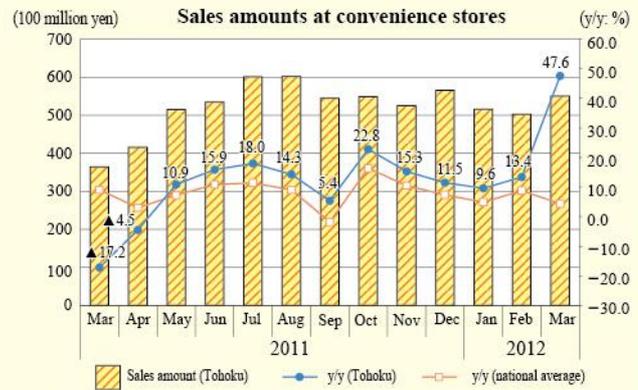
Consumption has continued to rise partly due to the special demand related to recovery and reconstruction from the Disaster and has recovered to the pre-Disaster level. Large retail stores (department stores and supermarkets) in the affected areas are doing better than the previous year and the national average, thanks to brisk sales of clothing and foodstuffs. Likewise, convenience stores are performing better than the previous year and the national average, spurred by demand from supporters of reconstruction efforts.

Chart. 7 Changes in personal consumption in the Tohoku region



Note: "The Tohoku region" denotes the six prefectures of Aomori, Iwate, Miyagi, Akita, Yamagata, and Fukushima.

Source: Chart developed by MLIT based on "Commercial Sales Statistics" of METI

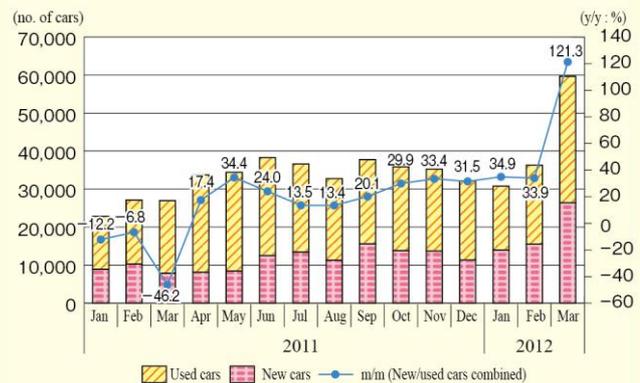


Note: "The Tohoku region" denotes the six prefectures of Aomori, Iwate, Miyagi, Akita, Yamagata, and Fukushima.

Source: Chart developed by MLIT based on "Commercial Sales Statistics" of METI

Also in terms of passenger cars, it is estimated that 146,000 cars in Miyagi, 40,000 in Iwate, and 50,000 in Fukushima were lost to the tsunami but replacement demand attributable to the Disaster has pushed car sales above the previous year.

Chart. 8 Numbers of new cars sold and used cars registered in Iwate, Miyagi, and Fukushima Prefectures

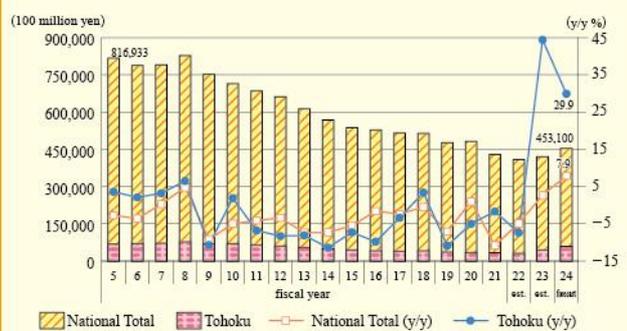


Source: Chart developed by MLIT based on "Statistical Information of Automobile Registration" of Japan Automobile Dealers Association

(Sharp increase in public investment)

Construction investment in fiscal 2011^{Note} is estimated at ¥41.99 trillion and that in fiscal 2012 is estimated at ¥45.31 trillion. Out of these amounts, ¥4.52 trillion in fiscal 2011 and ¥5.87 trillion in 2012 are expected to be invested in the Tohoku region. Public works (on a contract-amount basis) of the three Tohoku prefectures remain at a higher level than the same month of the previous year with the contribution of recovery and reconstruction demand. MLIT expects that thanks to the construction investment related to recovery and reconstruction from the Disaster in the Tohoku region, some 174,000 jobs in 2011 and 498,000 jobs in 2012 will be created.

Chart. 9 Changes in construction investment amounts



Note: Construction investment amounts of Tohoku are estimated through allocating construction investment estimates by the regional performance rate of overall construction statistics.

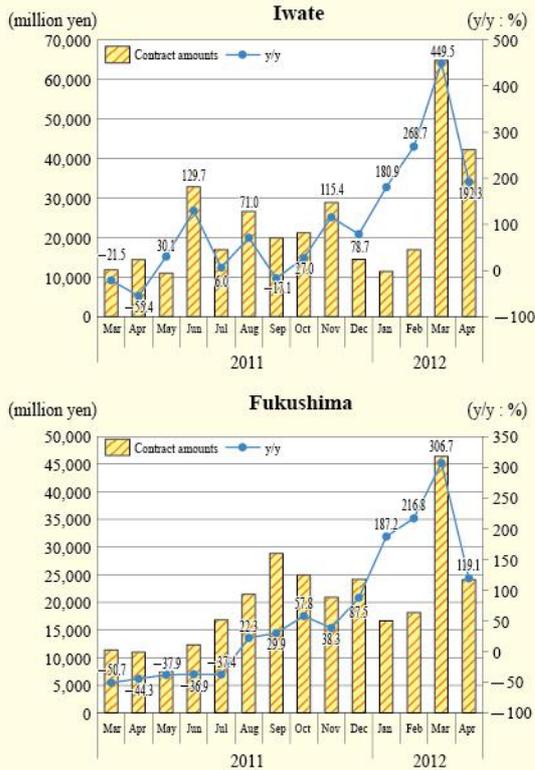
For 2011, construction investment amounts related to the recovery and reconstruction from the Disaster of the Tohoku region are estimated based on the regional performance rate of the 2011 overall construction statistics.

For 2012, construction investment amounts related to the recovery and reconstruction from the Disaster of the Tohoku region were forecasted based on the regional performance rate of the 2011 overall construction statistics and on the budget status.

Source: MLIT

Note: "Construction investment" captures the forecast construction activities for all of Japan on a performance basis. It is composed of construction (residential and non-residential) and civil engineering work (public and private).

Chart. 10 Contract amounts of public works

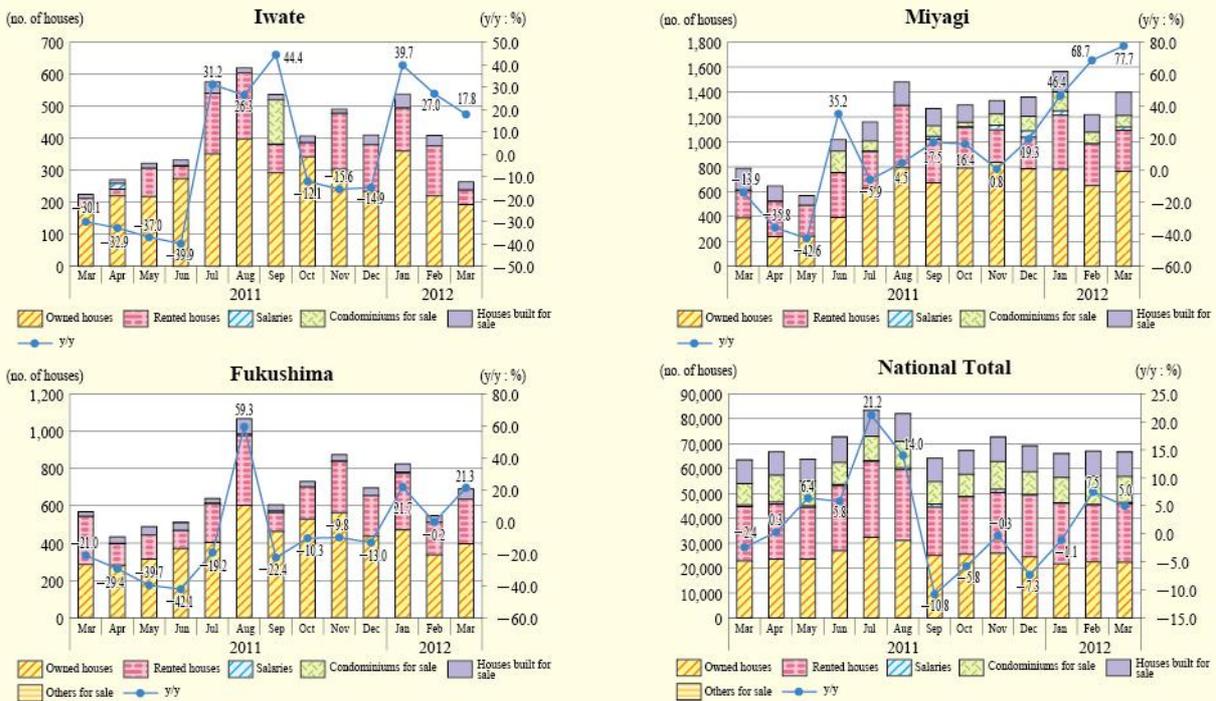


Source: Chart developed by MLIT based on construction guarantee data of Hokkaido and such data of East Japan and West Japan

(Housing starts rebounding)

Housing starts in the three prefectures of Tohoku dipped below the same month of the previous year right after the Disaster but then have begun to rebound.

Chart. 11 Housing starts

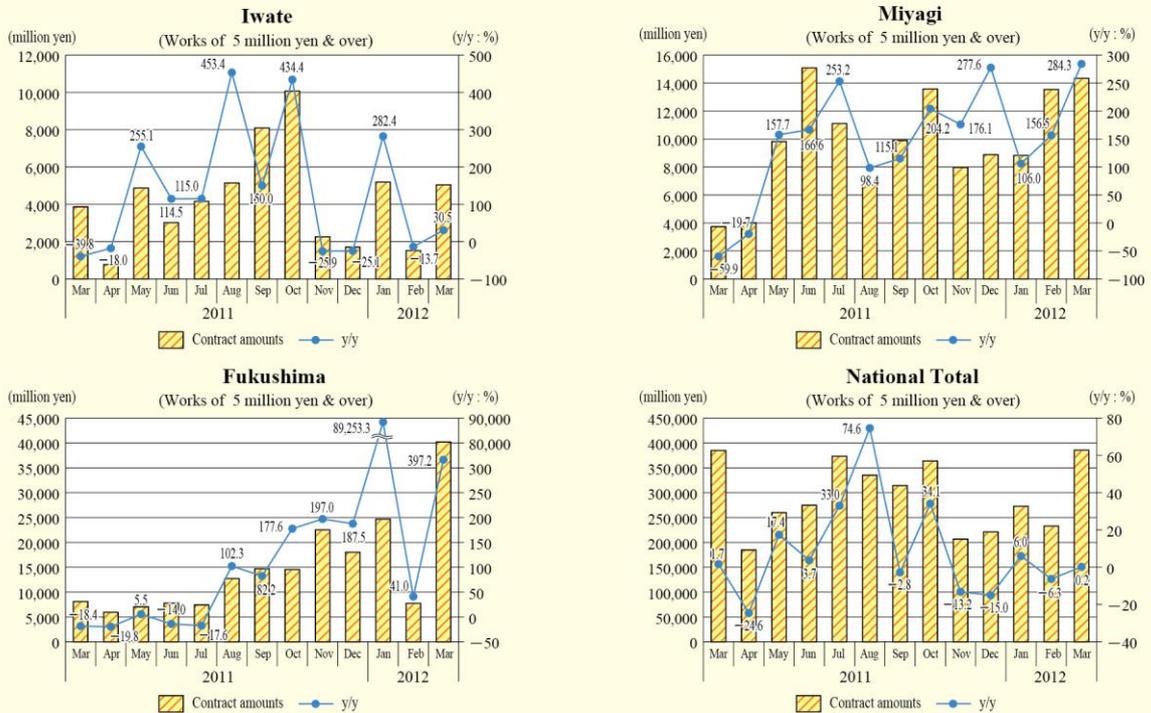


Source: "Statistical Survey of Construction Starts" (monthly) of MLIT

(Private investments for reconstruction also looking up)

Supported mainly by demand related to recovery and reconstruction, other private investments have become robust as well. Contract amounts of private-sector civil engineering works in the three prefectures of Tohoku are hovering at a higher level than the same month of the previous year.

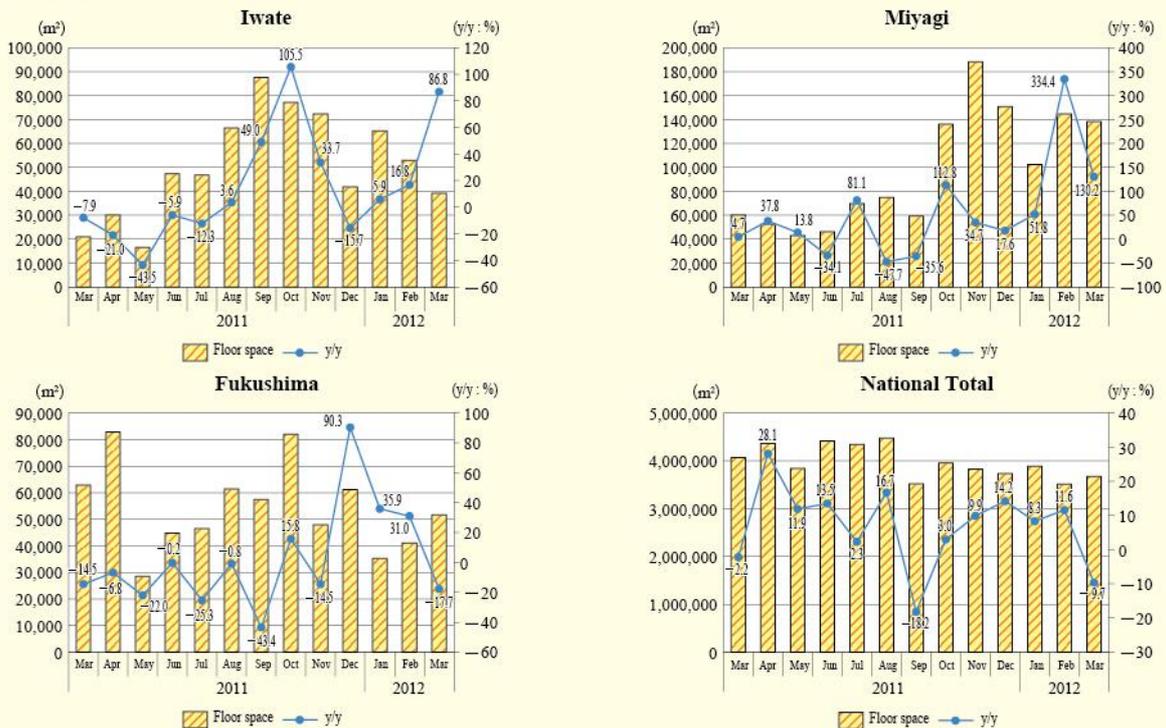
Chart. 12 Contract amounts of civil engineering works, etc., received from the private sector, etc.



Source: "Statistical Survey of Construction Starts" (monthly) of MLIT

In addition, construction of such non-residential buildings as offices and warehouses is also brisk and is on a higher level, compared with the same month of the previous year.

Chart. 13 Floor space of non-residential buildings started

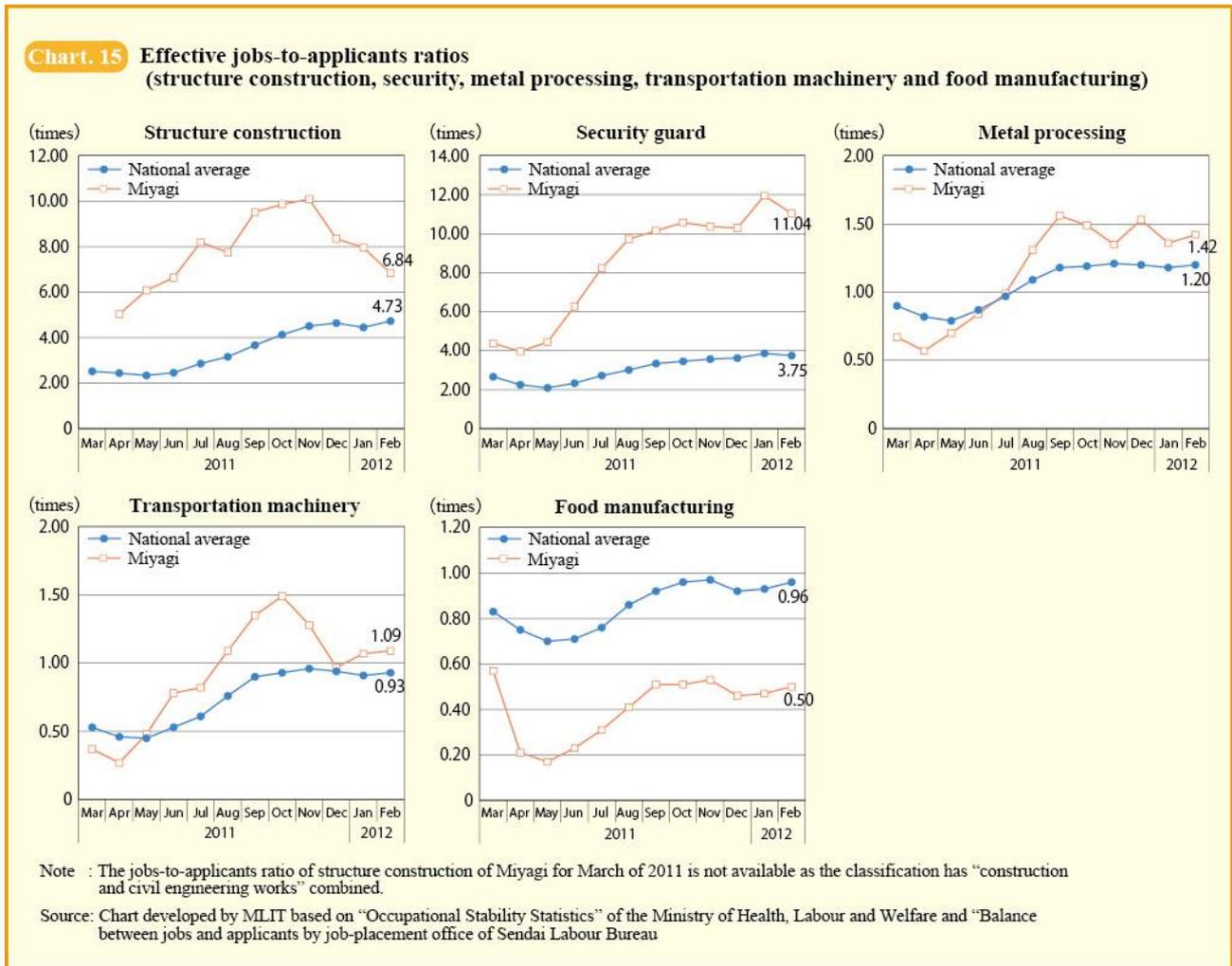
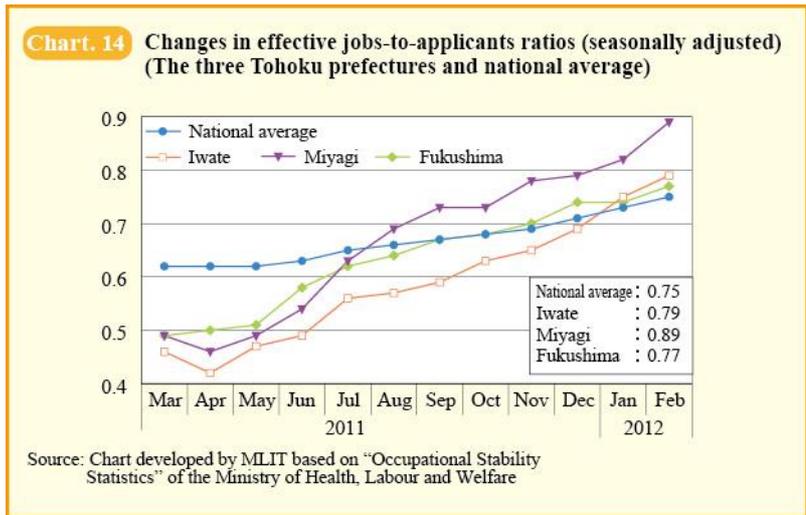


Source: "Statistical Survey of Construction Starts" (monthly) of MLIT

(Employment improving but mismatch noted)

The effective jobs-to-applicants ratios of the three Tohoku prefectures dropped right after the Disaster but have started to rise with more job openings available due to increased demand for Disaster-related construction projects as opposed to fewer job applicants.

However, in Miyagi Prefecture, for example, while there are such high jobs-to-applicants ratios in the construction and other industries as 6.84 (structure construction) and 11.04 (security guards, etc.), in industries on a recovery path as 1.42 (metal processing) and 1.09 (transportation machinery), the ratio in food manufacturing, an important local industry, remains at 0.50, which is lower than the national average and the mismatch between available jobs and applicants is noted.



(Transportation on a recovery track)

Trucking in the three prefectures of Tohoku dipped sharply due to disrupted infrastructures and supply chains but quantities transported are on the rise along with the progress in recovery and reconstruction.

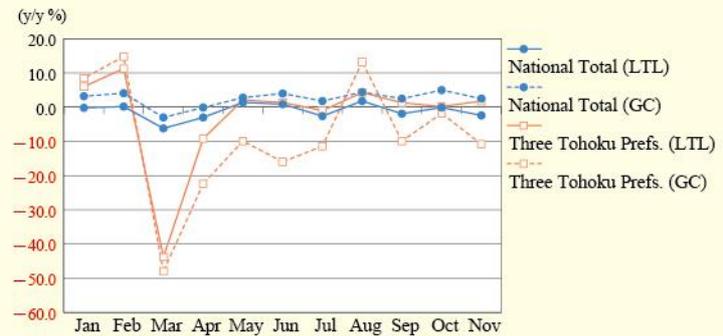
Furthermore, compared with recovery in general cargoes, which reflect activities of local businesses^{note1}, that in special less-than-truckload cargoes (LTL)^{note2}, most of which are home delivery items, is faster, with the latter hovering around the normal level since May 2011.

Quantities of cargoes handled at seaports sharply dropped on the Pacific Ocean side due to the Disaster, etc., but rebounded with the recovery of the ports and have exceeded the same month of the previous year since October

2011. At the Sendai- Shiogama Port, an international hub port, the number of containers handled nosedived to zero, but some recovery was noted after June 2011, when parts of the port facilities became available for use, and the handling level in December 2011 rose to 13,031 TEU^{note3} or approximately 70% of the previous year. Ports along the Japan Sea (in Akita and Yamagata Prefectures) saw a huge increase in cargo handling as they were used for alternate routing of transportation of the Pacific Ocean side (Aomori, Iwate, Miyagi, Fukushima, and Ibaraki).

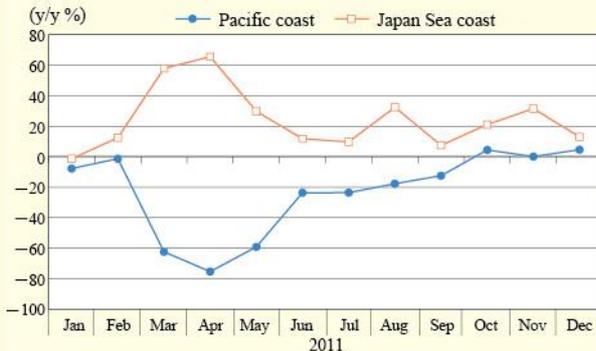
Chart. 16 Changes in trucking (three Tohoku prefectures and National Total)

Changes in LTL and general cargoes (GC) (National Total and three Tohoku prefectures.)



Note : Tohoku statistics obtained through interviews with seven carriers of LTL and 21 carriers of GC.
Source : Trucking Information

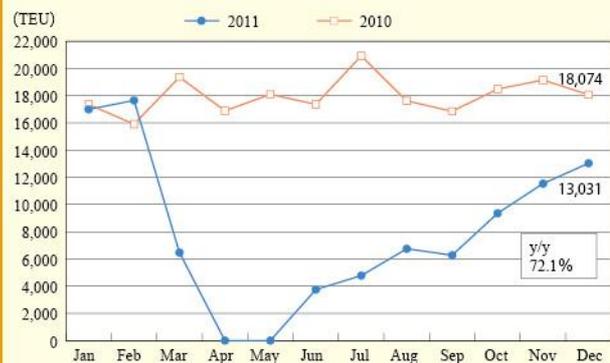
Chart. 17 Changes in cargo quantities handled in the Tohoku region



Note: 1 Pacific coast figures represent the combined total of Aomori (Port of Hachinohe), Miyagi (Ports of Ishinomaki & Sendai-Shiogama), Fukushima (Ports of Soma & Onahama) and Ibaraki (Port of Ibaraki <Hitachi, Hitachi-Naka & Oarai> Port of Kashima). Japan Sea coast figures represent the combined total of Akita (Ports of Noshiro, Funagawa & Akita) and Yamagata (Port of Sakata).
2 Figures for the Port of Soma during Jan & Feb are unreported.
3 Figures for the Iwate (Ports of Kuji, Miyako, Kamaishi & Ofunato) are excluded since post-Disaster data of Kamaishi and Ofunato are unreported.

Source: "Ports Survey" of MLIT

Chart. 18 Changes in the number of containers handled at the Port of Sendai-Shiogama



Source: "Ports Survey" of MLIT

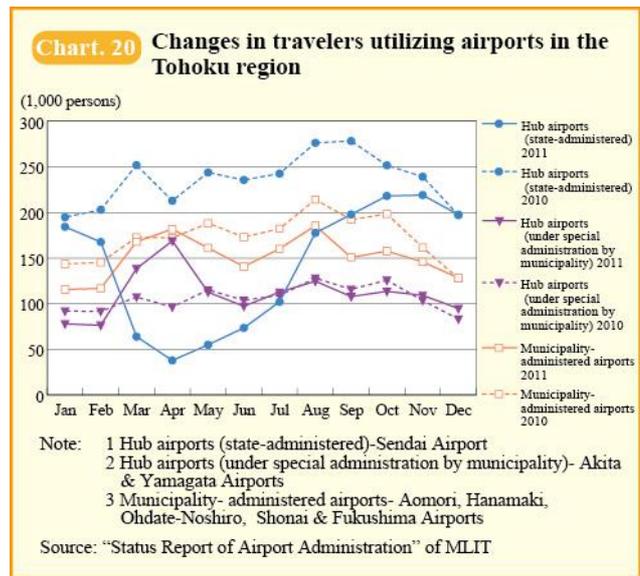
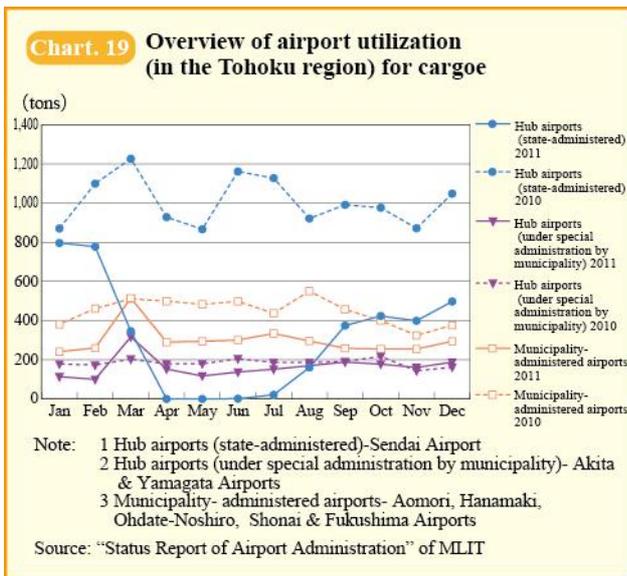
As for air cargo transport, Sendai Airport saw a sharp drop after the Disaster and even though it has been on a recovery path since August 2011, the pace of recovery is slow with the cargo handling there remaining at approximately 50% of the same month of the previous year.

In terms of air travelers, again Sendai Airport experienced a sharp decline after the Disaster, but the number of travelers bottomed out in April 2011 and has risen to the pre-Disaster level of year 2000. Also at other airports, the number has recovered to the pre-Disaster level.

Note 1 General cargoes (GC) are mainly from individual shippers and carried on a chartered truck load basis directly to the destinations.

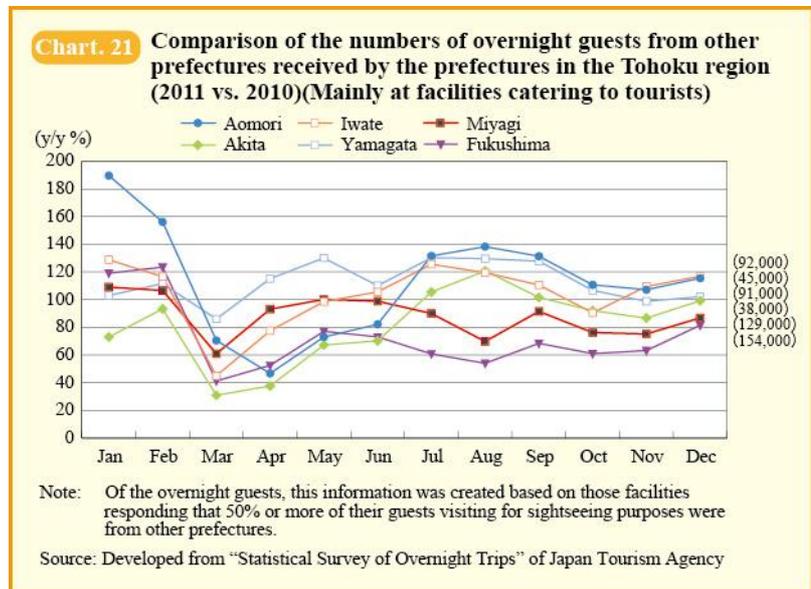
Note 2 Less- than-truckload cargoes are a combination of freights from multiple shippers and carried regularly between terminals via trunk roads, etc. Home deliveries are included in this category.

Note 3 TEU (Twenty-foot-equivalent unit) is used to indicate loading capacities of container vessels and amount of cargo handled at container terminals. It is a unit of cargo volume. 1 TEU means one twenty-foot container load.



(Decline in tourism)

Tourism declined drastically after the Disaster and even though it is on a recovery path, the situation still remains difficult. In terms of the number of overnight guests from other prefectures, Fukushima experienced a drop of some 60% from the same month of the previous year in March 2011, and the number was still some 20% down in December compared with a year ago. The number for Miyagi also hovers generally below the same month of the previous year.



2 Steady recovery and reconstruction of infrastructure and transportation systems

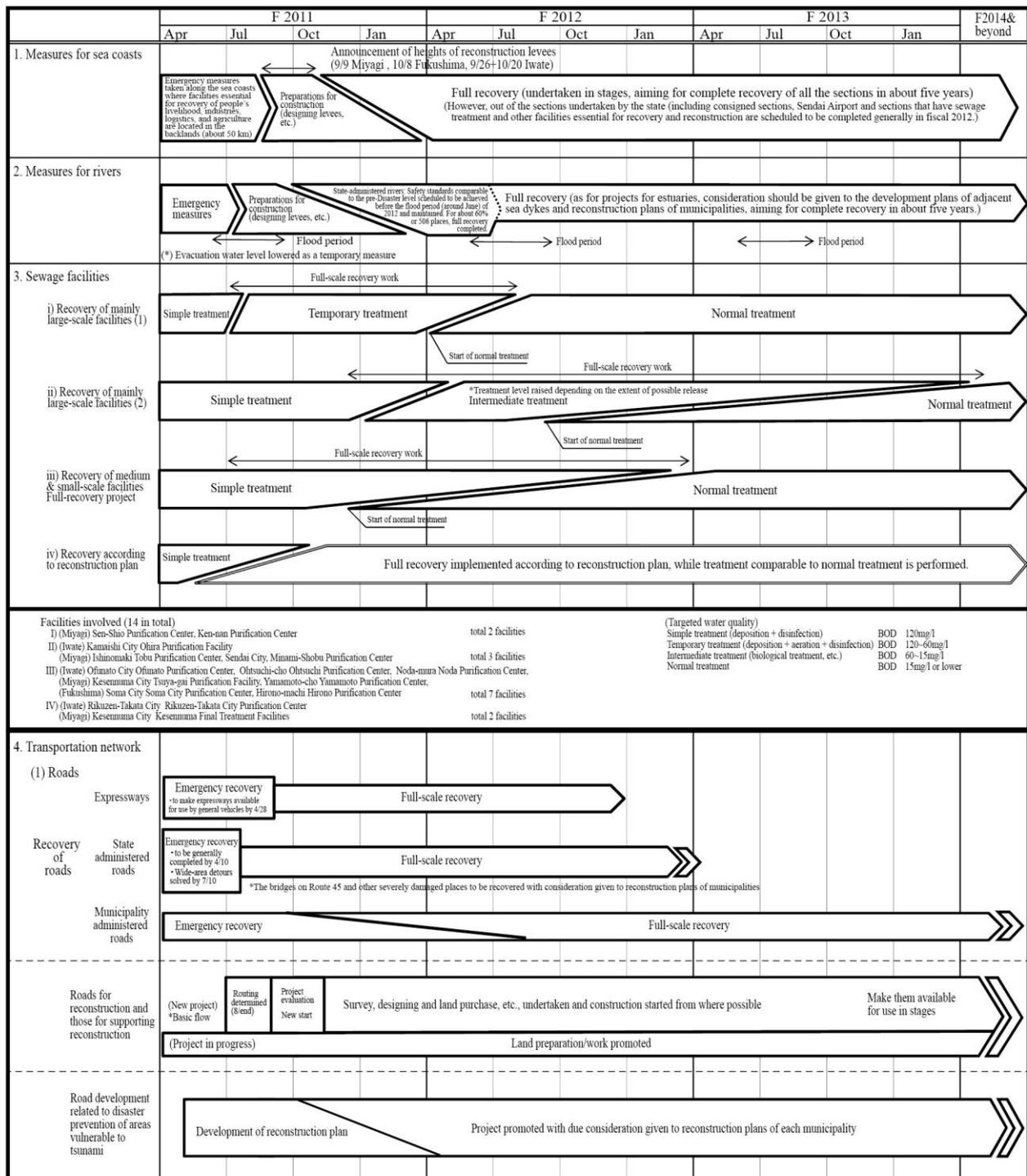
Steady recovery and reconstruction is being promoted for various public facilities administered by MLIT. According to the present timetable;

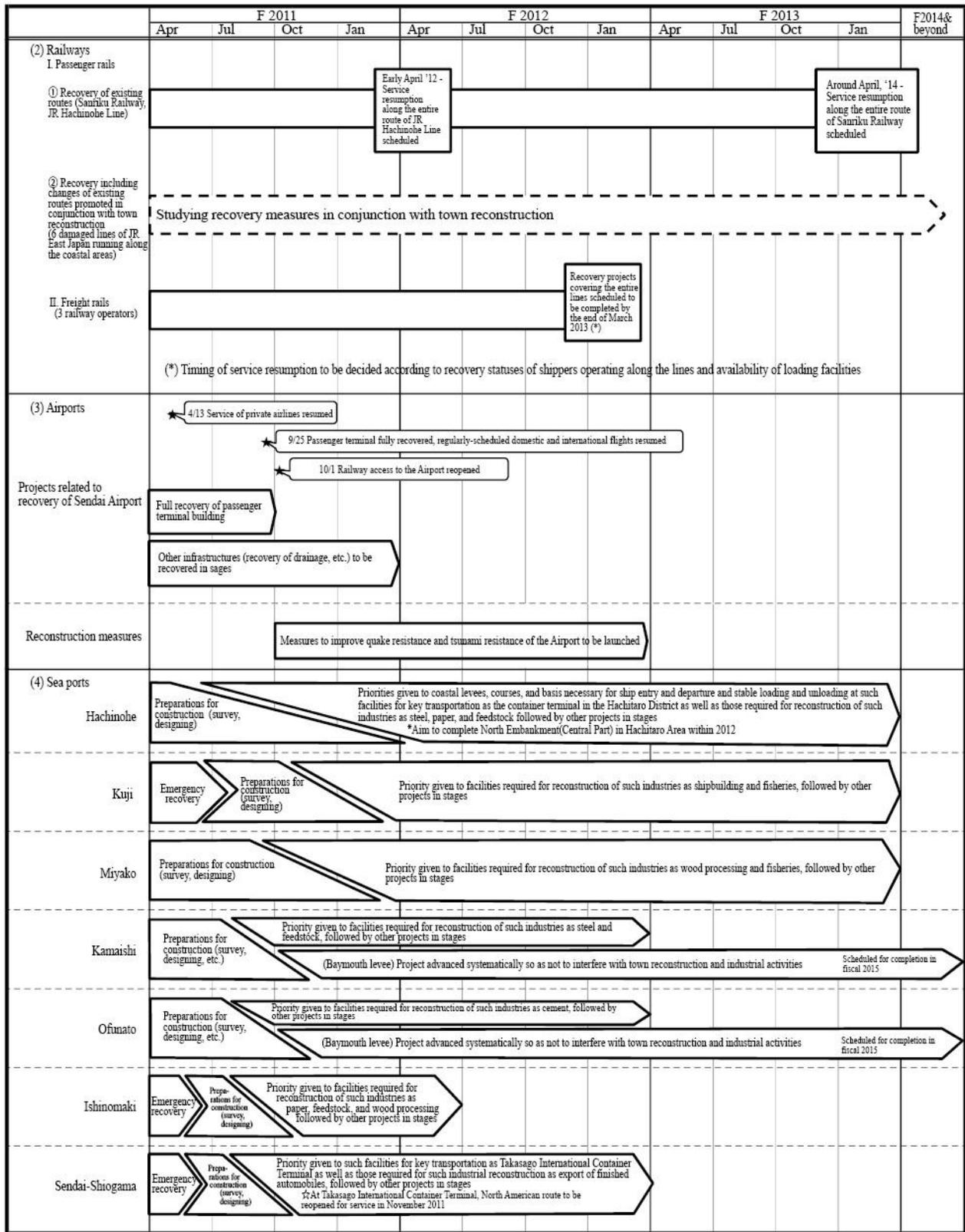
- Measures for coasts: Most sections that have Sendai Airport and such facilities as waste water treatment plants that are vital for recovery and reconstruction in the backlands will be fully restored by the end of fiscal 2012 and other sections will be generally restored in five years.
- Measures for rivers: Sections of levees administered by the national government will be fully restored by the flush period of 2012 (about June) except some portions. Measures against liquefaction will be completed within fiscal 2012. In areas where tsunami are assumed to occur, construction of levees of the necessary heights is scheduled to be generally completed in approximately five years.
- Sewage: Normal treatment is scheduled to start by the end of fiscal 2012 in all the relevant plants except one large-scale treatment plant, while promoting coordination with reconstruction plans of municipalities of various areas.
- Roads: (1) Expressways will be fully restored by the end of fiscal 2012 except in the caution zones, (2) state-administered roads will be fully restored by the end of fiscal 2012 (regarding such places severely damaged as bridges of Route 45, recovery will be moved forward with due consideration given to the recovery plans of the affected areas), and (3) in terms of roads for reconstruction and those for supporting reconstruction, new projects for 224 kilometers covering 18 sections were approved under the supplemental budget of fiscal 2011. Out of the sections where construction projects have already started, Hachinohe Minami Road (5.3km), Fudai By-pass (4.2 km), and Kamaishi-Akita Line of the Tohoku Throughway (24.0km between Miyamori and Towa) will be available for use in fiscal 2012.

- Railways yet to be restored: (1) As for passenger railways, full resumption of services will be around April 2014 for Sanriku Railway and before the end of fiscal 2015 for the JR Sen-Seki Line, for example, and (2) as to freight railways, resumption of services for all the lines will be before December of 2012.
- Airports: Projects to improve their quake resistance will be completed by the end of fiscal 2012.
- Seaports: Particularly important port facilities will be restored within fiscal 2012. Full recovery will be completed by fiscal 2015.
- Measures against sediment disasters: Emergency measures for collapsed and other dangerous places are scheduled to be completed by the rainy season of 2012. Also, measures for sections or places which may cause severe damage to important transportation networks essential for recovery will be completed in stages by the end of fiscal 2015.

Detailed respective recovery timetables are as per Chart 22.

Chart. 22 Recovery timetables (Headquarters for Reconstruction Measures against the Great East Japan Earthquake November 2011)





	F 2011				F 2012				F 2013				F2014& beyond			
	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan				
Soma	Preparations for construction (survey, designing)	Priority given to coastal container terminal necessary for key transportation, followed by other projects in stages														
		(Coastal levee) Project advanced systematically so as not to interfere with stable fuel supply to the thermal power plant												Scheduled for completion in fiscal 2015		
Onahama	Emergency recovery	Preparations for construction (survey, designing)	Priority given to facilities necessary for stable fuel supply to the thermal power plant and those required for reconstruction of such industries as chemical and non-ferrous, followed by other projects in stages													
Ibaraki Hitachi Port District	Emergency recovery	Preparations for construction (survey, designing)	Priority given to facilities necessary for key transportation of RO-RO operations to/from Hokkaido and those required for such industrial reconstruction as export and imported of finished automobiles, followed by other projects in stages													
Ibaraki Hitachinaka Port District	Emergency recovery	Preparations for construction (survey, designing)	Priority given to facilities necessary for such key transportation as Kita-Futo (North Dock) Container Terminal, followed by other projects in stages * Pier A at Kita-Futo used for container shipments scheduled to be reopened in fiscal 2011													
Ibaraki Oarai Zone	Emergency recovery	Preparations for construction (survey, designing)	Priority given to facilities necessary for key transportation of ferry operations to/from Hokkaido, followed by other projects in stages * Pier No. 3 used for ferry operations scheduled to be reopened in fiscal 2011													
Kashima	Emergency recovery	Preparations for construction (survey, designing)	Full recovery of mooring facilities	* Priority given to facilities necessary for reconstruction of such industries as steel, chemical, and wood processing followed by other projects in stages												
			Full recovery of navigation courses and basins to be undertaken to ensure sufficient water depth for large vessels carrying raw materials into the Kashima Oceanfront Industrial Park													
5. Reconstruction of housing (public housing for disaster prevention)	Development of reconstruction plans (municipalities)													Support for promoting projects provided according to municipalities' reconstruction plans		
6. Town reconstruction (1) Collective relocation for disaster prevention, land adjustment, etc.	Development of reconstruction plans (municipalities)													Support for promoting projects provided according to municipalities' reconstruction plans		
(2) Damaged housing lots	Risk assessment of damaged housing lots, emergency measures	Detailed survey of damaged conditions, etc.		Measures for damaged housing lots promoted through implementation of emergency projects to deal with slid or collapsed housing lots												
7. Measures against sediment disaster	Emergency measures against sediment disaster taken at collapsed places *41 places in Miyagi, Fukushima, Ibaraki, and Niigata															
	Inspection of places vulnerable to sediment disasters	Building erosion-control banks in places where the ground has become soft (Measures for 24 places that are critical and require urgent attention scheduled for completion before the rainy season of 2012. Measures for other places to be generally completed in about five years.)														
	(*) Announcement of criterion of sediment disaster warning lowered as a temporary measure, and reviewed depending on rainfalls and general statuses of sediment disasters.															
8. Measures against ground subsidence and liquefaction	Measures against ground subsidence (measures for drainage)	Emergency drainage	Study on measures against floods	Implementation of measures against floods												
	(*) Departments/bureaus to cooperate with each other to implement emergency measures and at the same time drainage pumps to be deployed in wide areas for prompt implementation of drainage during floods															
Measures against liquefaction (Promotion of study and technical development of liquefaction)	Study of technical matters common to different facilities		Study and technical development of liquefaction to be promoted and results to be reflected in reconstruction measures as they are made available													
(Promotion of integrated measures against liquefaction covering public facilities and adjacent residential areas, etc.)	Studies on better understanding of damage conditions and construction methods to prevent liquefaction, etc.		Promotion of effective and efficient measures against liquefaction with due consideration given to municipalities' reconstruction policies													

Case examples

Approaches to recover and reconstruct infrastructures and transportation systems

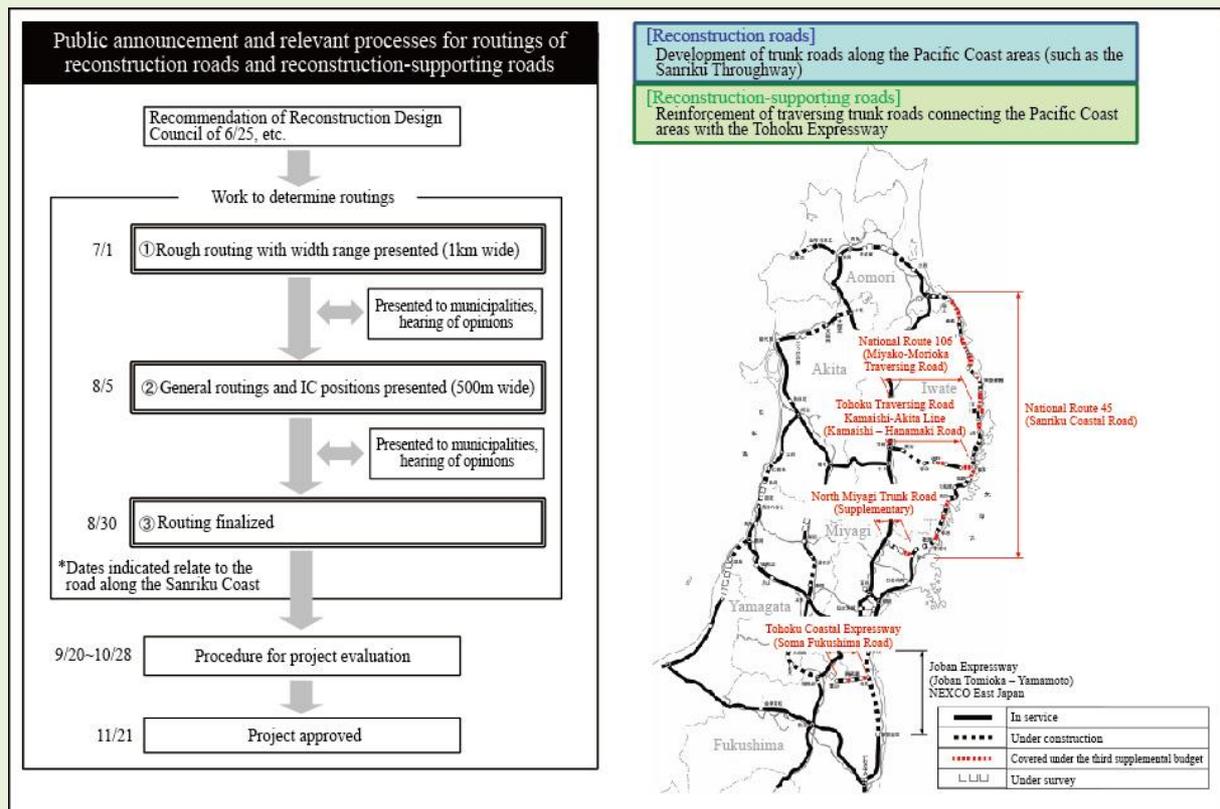
1. Emergency maintenance of roads for reconstruction and those for supporting reconstruction ~ early determination of routing and startup of new projects~

The Disaster damaged and severed Route 45 running along the Pacific Coast, but since Sanriku Coastal Road, which runs side-by-side with the Route and is partially used, was built outside the tsunami-flooding zone, it was hardly damaged and played an important role after the Disaster as a detour for Route 45 and emergency transportation route.

However, it was pointed out that only approximately 40% of Sanriku Coastal Road is in service and its function as a part of the transportation network has room for improvement, and that with such networks in the Japan Sea side and those connecting the Japan Sea and the Pacific Ocean being weak, prompt delivery of cargoes needed for relief was not fully carried out. And a recommendation was made at a session of the Reconstruction Design Council that “a priority should be given to emergency upgrading of roads along the Pacific Coast and those connecting the Pacific Coast and the Tohoku Expressway”.

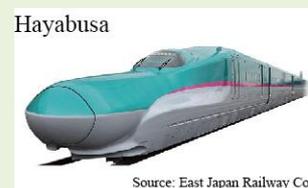
Following the recommendation, emergency work was initiated in July 2011 to determine routing for uncompleted sections of the Sanriku Coastal Road as a reconstruction road and the Kamaishi-Akita Line and other parts of the Tohoku Traversing Expressway as reconstruction-supporting roads, and with the cooperation of local residents, the routing was determined on August 30 - within the very short period of approximately two months. Subsequently, after the deliberation at the social project evaluation team of Road Subcommittee in Social Infrastructure Development Council, it was approved as a new project under the third supplemental budget of fiscal 2011.

The upgrading of such reconstruction roads as the Sanriku Coastal Road and reconstruction-supporting roads is promoted as a leading project for the earliest possible reconstruction of the Sanriku coastal areas.

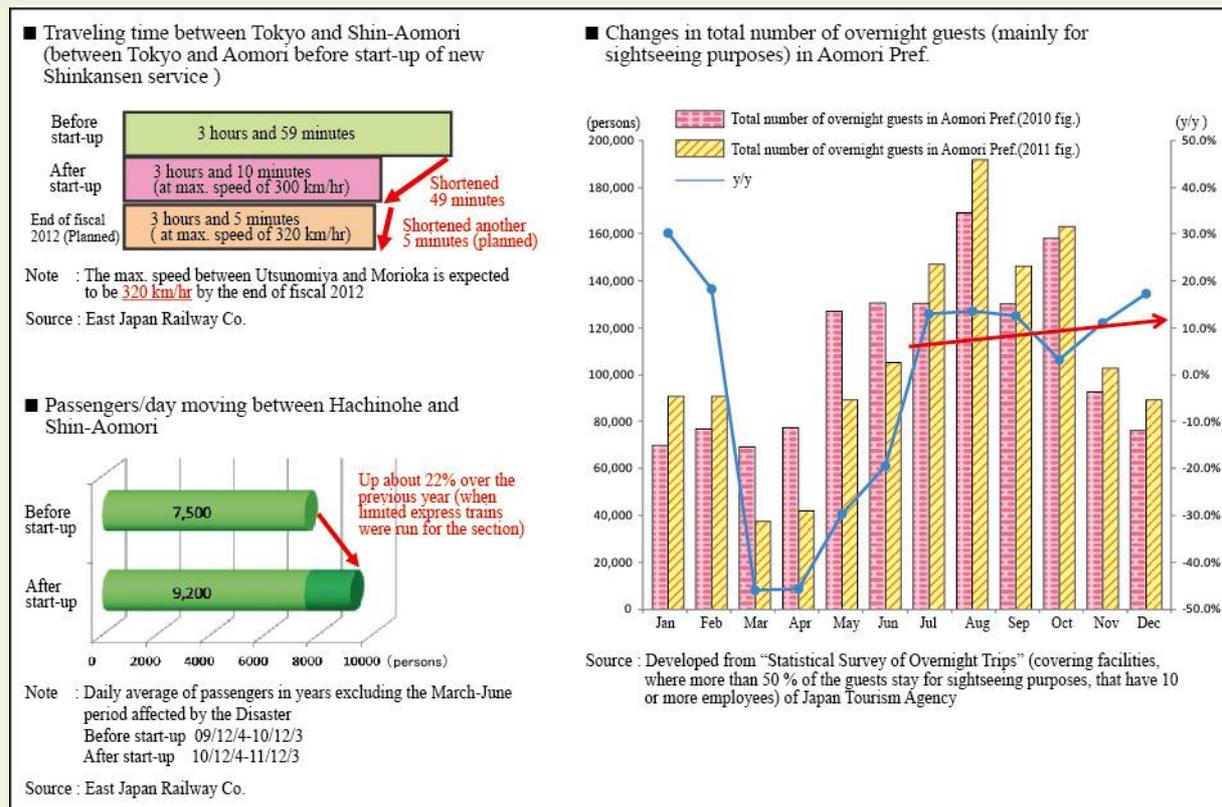


2. Reconstruction of the Tohoku Shinkansen

December 4, 2011 marked the first anniversary of the start-up of extended services of the Tohoku Shinkansen from Hachinohe Station to Shin-Aomori Station within Aomori Prefecture. For this Shinkansen section, a new car type E5 “Hayabusa” with a maximum speed of 300 km was introduced on March 5, 2011, which raised expectations for attracting tourists but six days later, the Disaster occurred. Sendai Station and other facilities were damaged and the operations were suspended for more than a month. But partial operation with reduced speed was resumed on April 29 as a symbol of recovery and normal operation was resumed on September 23. The extended section between Hachinohe and Shin-Aomori



handled 2.68 million passengers during a one-year period through December 3 of 2011 (except March 11 through April 28 when services were suspended due to effects of the Disaster.) The number of passengers per day stood at 9,200, which was up approximately 20% over a year ago when the section was serviced with conventional trains. Passengers in September rose 34% over a year ago and positive effects were noted as the month saw a 15% increase of visitors to 34 tourist facilities in Aomori Prefecture. “Hayabusa” is expected to raise its maximum speed to 320 km by the end of fiscal 2012 and to travel between Tokyo and Shin-Aomori in about three hours and five minutes in the fastest case.



3. Developments leading to the reconstruction of Sanriku Railway

Sanriku Railway servicing the coastal areas of Iwate Prefecture was severely damaged by the Disaster and services are interrupted for two thirds of the total distance of approximately 108 km. In the sections where services were resumed early, Sanriku Railway Co., (a third-sector entity with capital infusion from Iwate Prefecture, etc.), has been running their trains, dubbing them the “recovery support train.” The Company made the ride free during March last year, has offered fare discounts since April, and continues to serve as a “means of transportation for local people” but their monthly revenue has dropped to ¥7-8 million, which is approximately one fourth of the pre-Disaster level.

However, sales of goods of the Sanriku Railway are rising. In June 2011, they introduced “Senbei (rice cracker) bound to sprout”, a product praying for early recovery. They were overwhelmed with orders from all over Japan and had difficulty keeping up with production. In August 2011, they cut rails swept by tsunami into pieces of 10 cm and 5 cm, dubbed them as “Rails praying for recovery” and made 200 pieces of them available for limited sale at unit prices of ¥50,000 and ¥30,000 respectively. Again, with orders to support the railway company received from all over Japan, they were sold out in a single day.

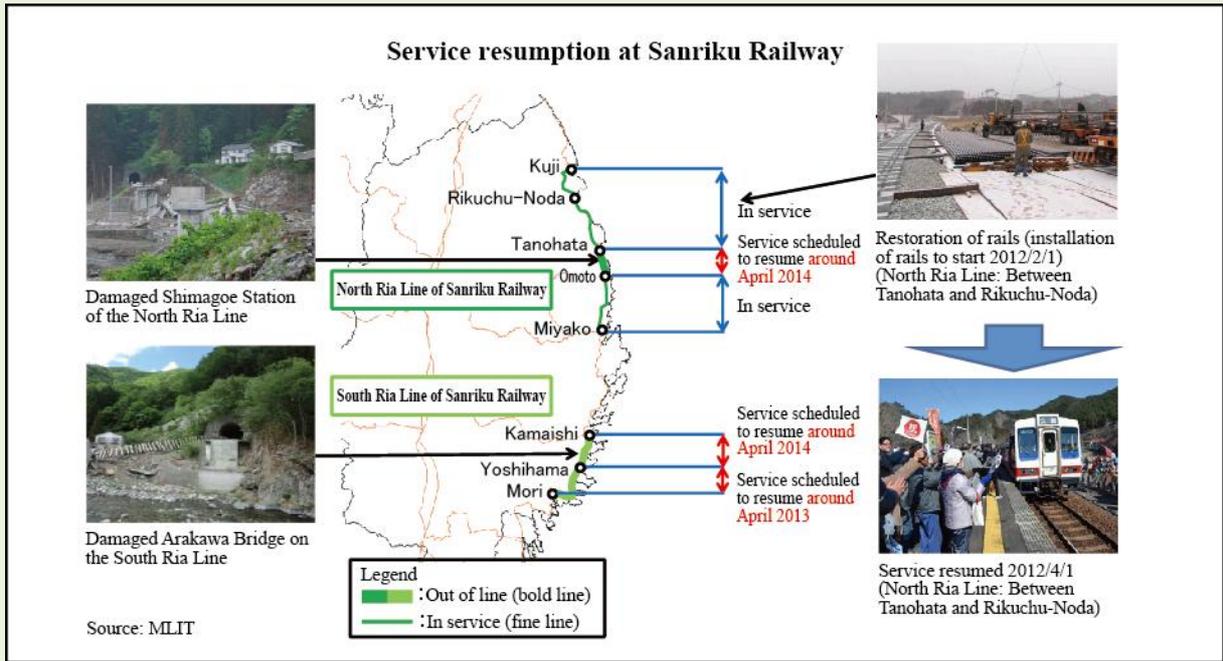
Furthermore, tours around the disaster areas launched in May 2011, in which employees of the Company act as guides, are very popular and through February of 2012, approximately 100 groups with a total of 1,500 people participated.

In the meantime, the Tohoku District Transport Bureau, in cooperation with the Tohoku Railway Association (comprising of 20 operators of private railways, third-sector railways, subways, etc., in the Tohoku region), has held a number of supporting events under the title of “Support campaign for recovery of local railways of Tohoku” such as “Cheer up, railways in the Sanriku area!” and “Cheer up, railways in Tohoku! Relay photo Exhibition” as well as setting up a special booth for selling goods of the Sanriku Railway. The purpose is to provide help to such local railways as the Sanriku Railway suffering from the decline in visiting tourists due to harmful rumors and other reasons even though they resumed operations, and to promote the utilization of their services.

With subsidies to cover recovery expenses included in the third supplemental budget for fiscal 2011 and in the fiscal 2012 budget, full-scale recovery projects were started in November 2011 and services will be resumed in stages, starting with sections where recovery projects are completed and ultimately the services will be resumed throughout all the lines around April of 2014.



Rail praying for recovery
Source: Sanriku Railway Co.



4. Free use of expressways in the Tohoku region

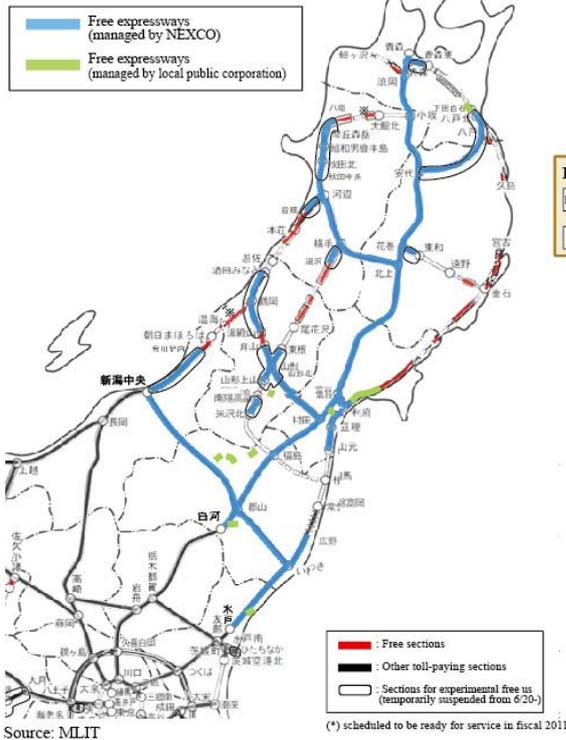
Expressways in the Tohoku region (including the Mito area of the Joban Expressway) were opened for free use from June 20, 2011 for supporting disaster victims and facilitating recovery and reconstruction.

A review was made of the areas, the types of vehicles, and other related matters for this special measure from the standpoints of support for the affected areas, promotion of local tourism, and support for disaster victims, and modified free use was continued from December 1, 2011 through March 31, 2012.

In addition, the free use is continued even after April 1, 2012 for evacuees of the nuclear power plant accident.

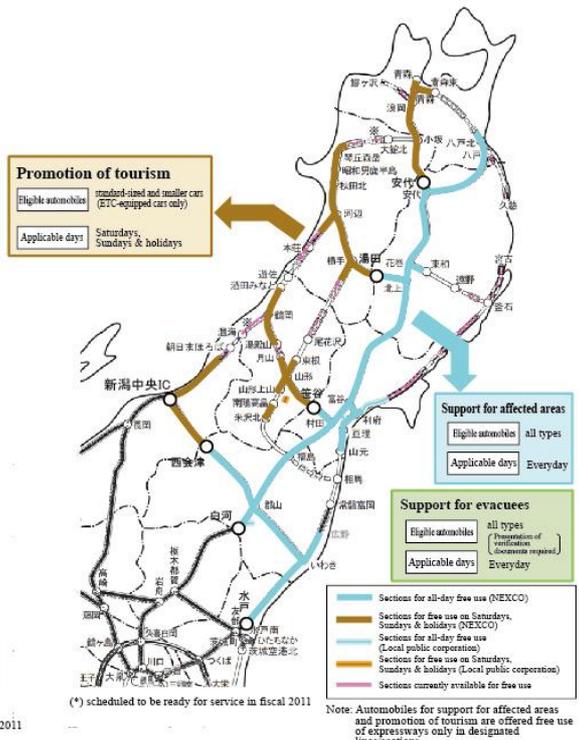
Free use of expressways in the Tohoku region Designated lines/sections for free use

Applicable period: June 20, 2011 through November 30, 2011



Free use of expressways in the Tohoku region Designated lines/sections for free use

Applicable period: December 1, 2011 through March 31, 2012



3 Securement of stable housing

The Disaster totally collapsed over 120,000 houses and partially collapsed over 240,000 houses. As of April 5, 2012 out of 344,000 evacuees, some 320,000 live in public housing, temporary housing, and private-owned apartment houses, etc.

For those out of the above evacuees who can rebuild or purchase houses on their own, arrangements were made to reduce interests on housing loans advanced by the Japan Housing Finance Agency after the Disaster, and in order to provide support for cases where only the housing lots were damaged, a housing lot loan system for reconstruction from the Disaster was established. Additionally, grace periods for a maximum period of five years or rescheduling of payments and interest reduction programs during the grace period are offered on existing loans as well.

Furthermore, since the Disaster was of such a great magnitude and a large number of public housing must be prepared promptly in the affected areas for the benefit of those victims who have difficulty building or acquiring houses on their own, the burden on municipalities associated with such preparations are lessened compared with normal times. As special assistance measures, subsidy systems for land acquisition and preparation expenses for public housings necessitated due to the Disaster, programs for reduced rent payments for especially low-income residents of such public housing,

and for developing proper private-owned rental houses to assist recovery from the Disaster in the affected areas were established. Also, conditions for admission into public housing were moderated and special measures on assignments were implemented.

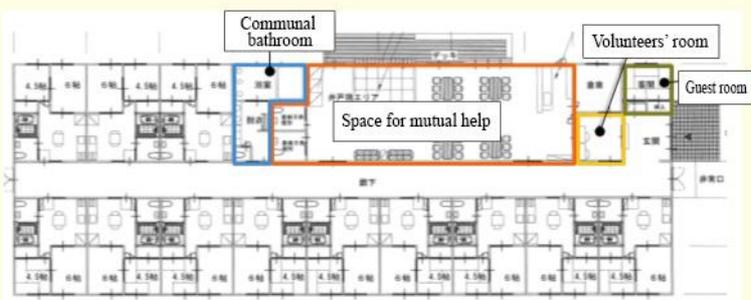
Further, in light of acceleration of aging in the affected areas, support systems to build public housing for disaster victims and facilities for assisting the daily lives of senior citizens (day service facilities, visiting nurse stations, etc.) in the same premises through cooperation between municipalities and private enterprises were established, and to promote the supply of housing that offers services for elderly people, assistance was provided for relevant construction or maintenance.

Chart. 23 Construction of public housings in the Disaster areas (As of February 21, 2012)

Prefecture	Housing lots acquired	Designing started	Construction started	Supply plans
Iwate	5 districts 217 houses	1 district 12 houses		4,000-5,000 houses
Miyagi	18 districts 1,307 houses	9 districts 812 houses		12,000 houses (15 localities)
Fukushima	4 districts 86 houses	2 districts 62 houses	1 district 12 houses	Overall plans undecided

Source: MLIT

Chart. 24 Mutual-help type housing for preventing elderly disaster victims from being isolated (Soma Idobata Nagaya) Public housing in the disaster area (Soma City, Fukushima Prefecture)



Source: Soma City, Fukushima Prefecture

4 Promotion of town reconstruction

Under the current reconstruction schemes in which measures including large-scale collective relocation to uplands and other areas are planned, there are differences in progress among municipalities. MLIT is extending the utmost support to them, maximizing its onsite abilities, comprehensive power, and readiness. Challenges facing the affected areas and steps taken to deal with them are introduced below.

(Enactment of the Law for Establishing Special Zones for Reconstruction from the Great East Japan Earthquake)

In order to facilitate smooth and prompt reconstruction from the Disaster, “the Law for Establishing Special Zones for Reconstruction after the Great East Japan Earthquake” was enacted on December 7, 2011. Under the system of establishing special reconstruction zones based on this law, municipalities that were damaged by the Disaster in all or a part of the regions (227 municipalities as of the end of April 2012) can develop plans independently or jointly to take advantage of special provisions which allow them to select the special provisions that are suited to deal with their damage situations, are in line with their directions of reconstruction and are available for utilization. The special measures available include (1) simplification of procedures for permission and authorization as well as for zoning, (2) utilization of new project models for integrated exchange and development of building lots and farmlands, (3) moderation of occupancy qualifications for public housings, etc., and (4) distribution of reconstruction grants that may be used for a package of wide-ranging supporting projects necessary to rebuild communities undertaken by municipalities in severely damaged areas, etc. The reconstruction grants (covered under the third supplemental budget for fiscal 2011, totaling approximately ¥1.93 trillion on a project-cost basis and approximately ¥1.56 trillion on a national-expenditure basis) are distributed for core projects (40 projects by five ministries, out of which 23 are related to MLIT) that are hardware projects, etc., necessary to rebuild communities including such projects as collective relocation of communities to uplands and improvement of fishing ports, etc., as well as related projects undertaken by municipalities with a view to enhancing the positive effects of such core projects. With additional national subsidies and additional tax allocations to municipalities, they give due consideration to the burden on localities.

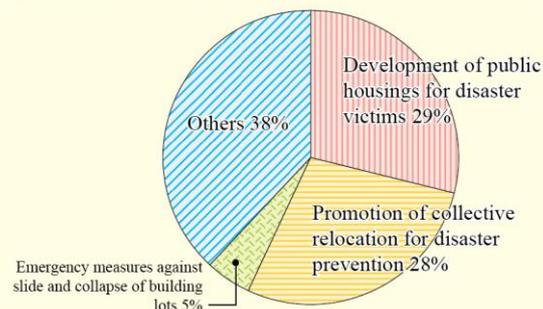
As to allocable grants, the Reconstruction Agency issued the first notice (for a total project fund of ¥305.32 billion) in March 2012, and the second notice (for a total project fund of ¥316.59 billion) in May 2012. The breakdown, in terms of amounts, shows that development of public housings for disaster victims accounts for 29%, projects to promote collective relocation for disaster prevention 28%, and measures for slide and collapse of building lots 5%.

Chart. 25 Available amounts (project expenditures) (first + second rounds) of reconstruction grants

Iwate	(14 cities, towns and villages)	¥193.78 bln
Miyagi	(22 cities and towns)	¥313.98 bln
Fukushima	(22 cities, towns and villages)	¥97.47 bln
Others	(24 cities, towns and villages)	¥16.66 bln
Total	(82 cities, towns and villages)	¥621.91 bln

Note : The total may not coincide with the total of each line due to rounding of fractions
Source : Developed by MLIT from data of the Reconstruction Agency

Chart. 26 Main projects covered under available grants



Source: Developed by MLIT from data of the Reconstruction Agency

Chart. 27 Reconstruction grants for 23 project models undertaken by MLIT (out of 40 core projects by five ministries)

* Projects covered under the third supplemental budget: during the overall reconstruction period, contents of projects may change

- Road project (roads to connect different parts of urban areas)
- Road project (improvement of roads related to relocation to uplands, etc. (land readjustment))
- Road project (improvement of roads as measures against disasters/earthquakes)
- Project to construct public housing for disaster victims (construction of public housing for disaster victims, support project for land acquisition, preparation for public housings for disaster victims)
- Project to lower rents of public housing for disaster victims
- Special project to lower rents of public housing for victims of the Great East Japan Earthquake (new)
- Project to improve such stocks as public housing (improvement for quake resistance, improvement of elevators)
- Project to improve residential areas (removal of inadequate houses, construction of better houses, etc.)
- Project to improve small-scale residential areas (removal of inadequate houses, construction of small, better houses, etc.)
- Project to comprehensively improve urban residential areas (revitalization and development of urban residential areas)
- Project to develop structures of good performance (supply of urban houses, voluntary development, etc.)
- Project to build safe stocks as houses/structures (project to improve quake resistance of houses & structures)
- Project to build safe stocks as houses/structures (project to relocate houses built close to cliffs and other dangerous places)
- Emergency project to prevent slide and collapse of housing lots (new)
- Project to develop bases for reconstruction from tsunami in urban areas (new)
- Project to redevelop urban areas
- Project to readjust land for urban revitalization (readjustment of land to develop disaster-hit urban areas, etc.)
- Project to readjust land for urban revitalization (measure against liquefaction of urban areas)
- Project to promote disaster prevention in cities (measure against liquefaction of urban areas)
- Project to comprehensively promote disaster prevention in cities (development of plans such as tsunami simulation)
- Project related to sewage
- Project related to parks
- Project to promote collective relocation for disaster prevention

Source: MLIT

(Support for developing reconstruction plans for affected localities)

In terms of reconstruction plans for localities flooded by the tsunami, surveys were conducted to determine the damage situations in 62 localities in the Pacific Coast areas of mainland Japan. Out of these, MLIT personnel were dispatched to 43 localities that requested assistance where they provided technical support through conducting analyses of damage situations, urban characteristics and reconstruction patterns that satisfy local residents' wishes and views, and conducting surveys and studies on reconstruction methods to respond to them.

(Support for town reconstruction)

The main contents of the reconstruction plans include (1) improvement of urban areas, (2) relocation to uplands from coastal areas and improvement of communities, (3) improvement of emergency transportation roads and evacuation roads, (4) improvement of rainwater drainage and water and sewage facilities, (5) development of parks for disaster prevention and those for symbolizing reconstruction from the Disaster, (6) elevation of trunk roads, (7) development of river and sea levees, and (8) development of tide-prevention forests.

Considering reconstruction plans made by municipalities, assistance for developing infrastructures of various types that properly respond to the needs of different areas is offered. In addition, through different project models (such as projects to accelerate collective relocation for disaster prevention, those to readjust land, and emergency projects to prevent the slide and collapse of building lots, etc.), MLIT is working hard to reconstruct the urban areas damaged by the Disaster.

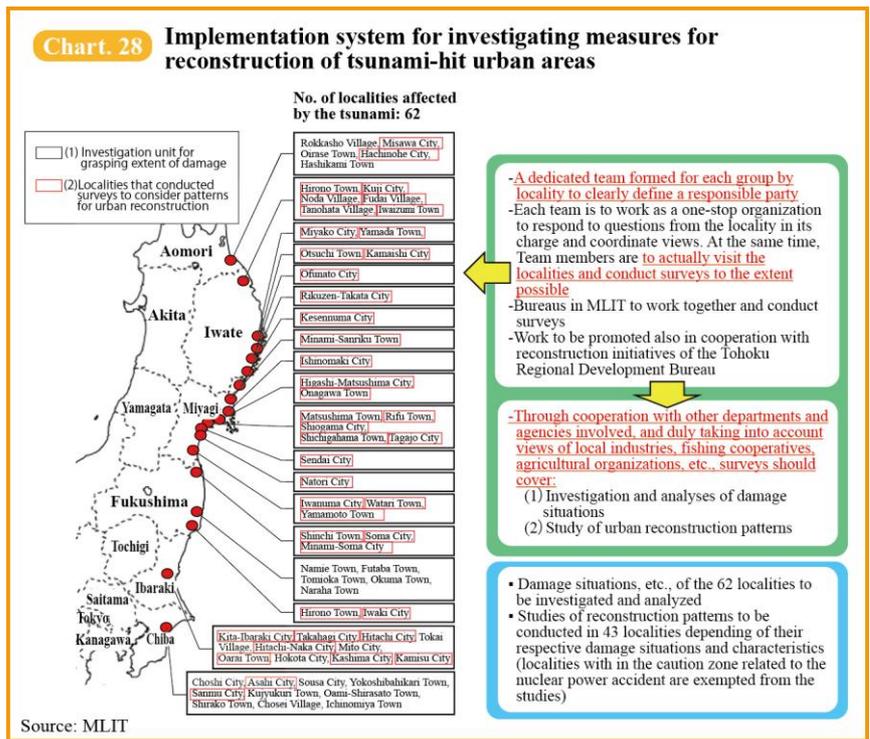
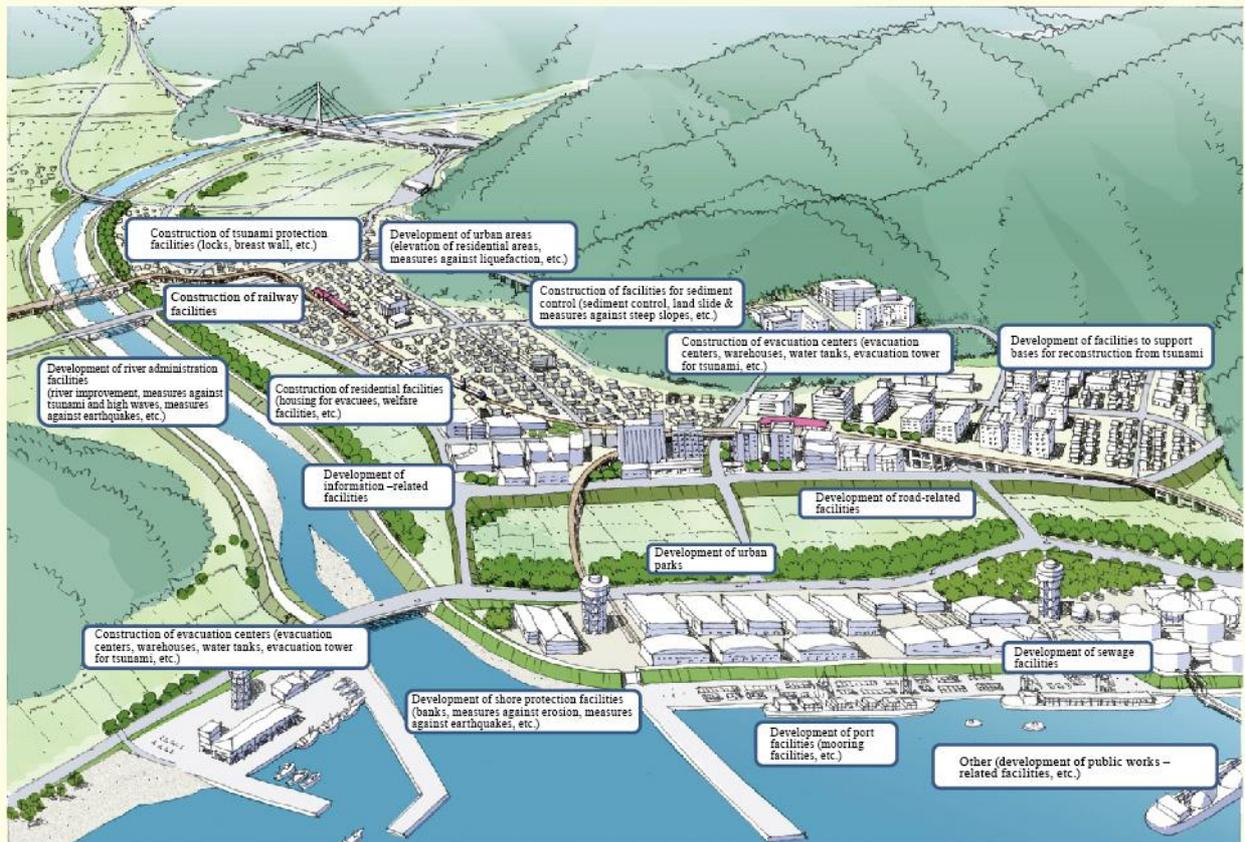


Chart. 29 List of project models for town reconstruction (image)



(Promotion of projects to accelerate collective relocation for disaster prevention)

For projects to accelerate collective relocation for disaster prevention, the national government provides subsidies to cover portions of municipalities' expenditures with a view to accelerating such relocation of people living in disaster areas or sections in disaster-vulnerable areas where habitation by residents is deemed inappropriate (collectively called "relocation-advised areas"). To date, 1,834 households in 35 localities in total have been relocated, including cases undertaken in such disaster areas as the Niigata-Chuetsu Earthquake that occurred in 2004 (involving 115 households), the eruption of Mt. Usu that occurred in 2000 (involving 152 households) and the Hokkaido Nansei-Oki Earthquake that occurred in 1993 (involving 55 households).

The specific scheme of these projects requires municipalities to purchase damaged housing lots, develop new lots in relocation areas, and sell or lease them to disaster victims. In addition, financial assistance is provided to disaster victims in such forms as reimbursement of relocation expenses and amounts corresponding to interests on loans for acquiring housing lots or building houses. The national government provides subsidies for these projects but regarding subsidies for purchasing housing lots in relocation -advised areas there is attached the condition that such areas must be designated as disaster-vulnerable sections in accordance with Section 1, Article 35 of the Building Standards Act and building restrictions are imposed in order to prevent the rebuilding of houses vulnerable to tsunami and other disasters on the lots.

In the Disaster areas, additional measures to assist victims have been taken, including increased amounts of subsidies for acquiring and developing lots for residential estates and for building them on such lots, provision of subsidies for acquiring and developing lots for public facilities related with residential estates and moderated qualifications to reduce the scale of residential estates at new locations from ten or more households to five or more. Further, as to expenditures eligible for subsidies, recovery grants according to the subsidy rates will be provided and additional reconstruction grants as well as special tax grants for reconstruction from the Disaster will be provided and thus there will be no financial burden on municipalities.

Since these are projects to rebuild communities through collective relocation, understanding of disaster victims and their consensus will be an important point for execution.

(Deciding on the heights of levees)

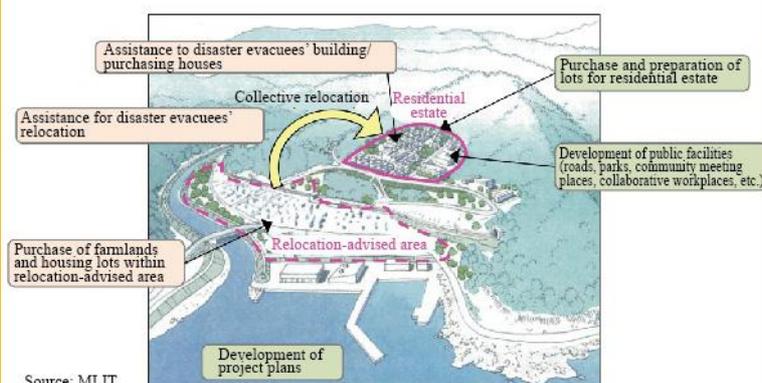
Based on a recommendation of the "Special Investigation Committee on Measures for Quakes and Tsunami based on lessons learned from the Earthquake off the Tohoku Pacific Coast," central disaster-prevention council, MLIT, and the Ministry of Agriculture, Forestry and Fisheries indicated in July 2011, a method of setting heights of coastal levees against relatively frequent tsunamis, comprehensively considering extra rises of such tidal waves in front of the levees, utilization of the coast, environmental impact, scenery, etc. In prefectures including Iwate, Miyagi, and Fukushima, the heights of levees as shown in the following figure have been set based on this method subsequent to briefings to the municipalities concerned. Through adjustments with utilization of backlands, etc., heights of levees will be finalized.

Chart. 30 Implemented projects to accelerate collective relocation for disaster prevention

Year when implemented	Name of locality		Houses relocated	Cause of disaster
	Prefecture	Locality		
'72-'73	Akita	Kawabe Town	11	Jul '72 local downpour in rainy season
-ditto-	Miyazaki	Ebino City	23	Jul '72 mountain side collapse due to downpour
'73	-ditto-	Kitago Town	14	Jul '72 local downpour in rainy season
'73-'74	Kumamoto	Kuratake Town	50	Jul '72 downpour in Kyushu
-ditto-	-ditto-	Himedo Town	176	Jul '72 downpour in Kyushu
-ditto-	-ditto-	Ryugatake Town	329	Jul '72 downpour in Kyushu
-ditto-	-ditto-	Shiga	59	Sep. '72 Typhoon No.20
-ditto-	Aichi	Ohara Village	22	Jul, '72 local downpour in rainy season
-ditto-	-ditto-	Fujioka Village	27	Jul, '72 local downpour in rainy season
-ditto-	Shimane	Masuda City	11	Jul, '72 cliff collapse due to downpour
'74	Yamagata	Hirata Town	16	Mar '74 mudslide
'74-'75	-ditto-	Okura Village	20	Apr '74 mountain collapse
-ditto-	Tokushima	Kamiyama Town	25	Jul '74 Typhoon No.8
'75	Aomori	Sai Village	20	Jul '75 downpour
'75-'76	-ditto-	Iwaki Town	16	Aug '75 downpour
'76	-ditto-	Kuroishi City	44	Aug '75 downpour
'77-'78	Hyogo	Aoi City	23	Sep '76 Typhoon No. 17
-ditto-	Tokushima	Anabuki Town	70	Sep '76 Typhoon No. 17
'78-'79	Fukushima	Atsushikano Village	13	Jun-Jul '78 Mudslide due to downpour
'79	Miyagi	Sendai City	27	Jun '78 Quake off Miyagi Coast
'81-'82	Hokkaido	Abuta Town	21	Aug '77 crustal change due to eruption of Mt. Usu
-ditto-	Niigata	Sumon Village	21	Jan '81 Avalanche
-ditto-	-ditto-	Nagaoka City	15	Dec '80 Mudslide
-ditto-	Aomori	Sannohe Town	12	Jun '81 downpour
'83-'84	Tokyo	Miyake Village	301	Oct '83 Eruption in Miyakejima
-ditto-	Kumamoto	Matsushima Town	10	Jul '82 Mudslide
'93-'95	Nagasaki	Shimabara City	90	Jun '91 Eruption of Mt. Unzen
'94	Kagoshima	Mizobe Town	12	Aug '93 heavy rain
'94-'95	Hokkaido	Okushiri Town	55	Jul '93 Quake off Southwestern coast of Hokkaido
-ditto-	Nagasaki	Fukae Town	15	Jun '91 Eruption of Mt. Unzen
'96-'98	-ditto-	Shimabara City	19	Jun '91 Eruption of Mt. Unzen
'01	Hokkaido	Abuta Town	152	Maar '00 Eruption of Mt. Usu
'05-'06	Niigata	Nagaoka City	27	Oct '04 Chuetsu Quake
-ditto-	-ditto-	Kawaguchi Town	25	Oct '04 Chuetsu Quake
-ditto-	-ditto-	Ojiya City	63	Oct '04 Chuetsu Quake
Total	35 localities in total		1,834	

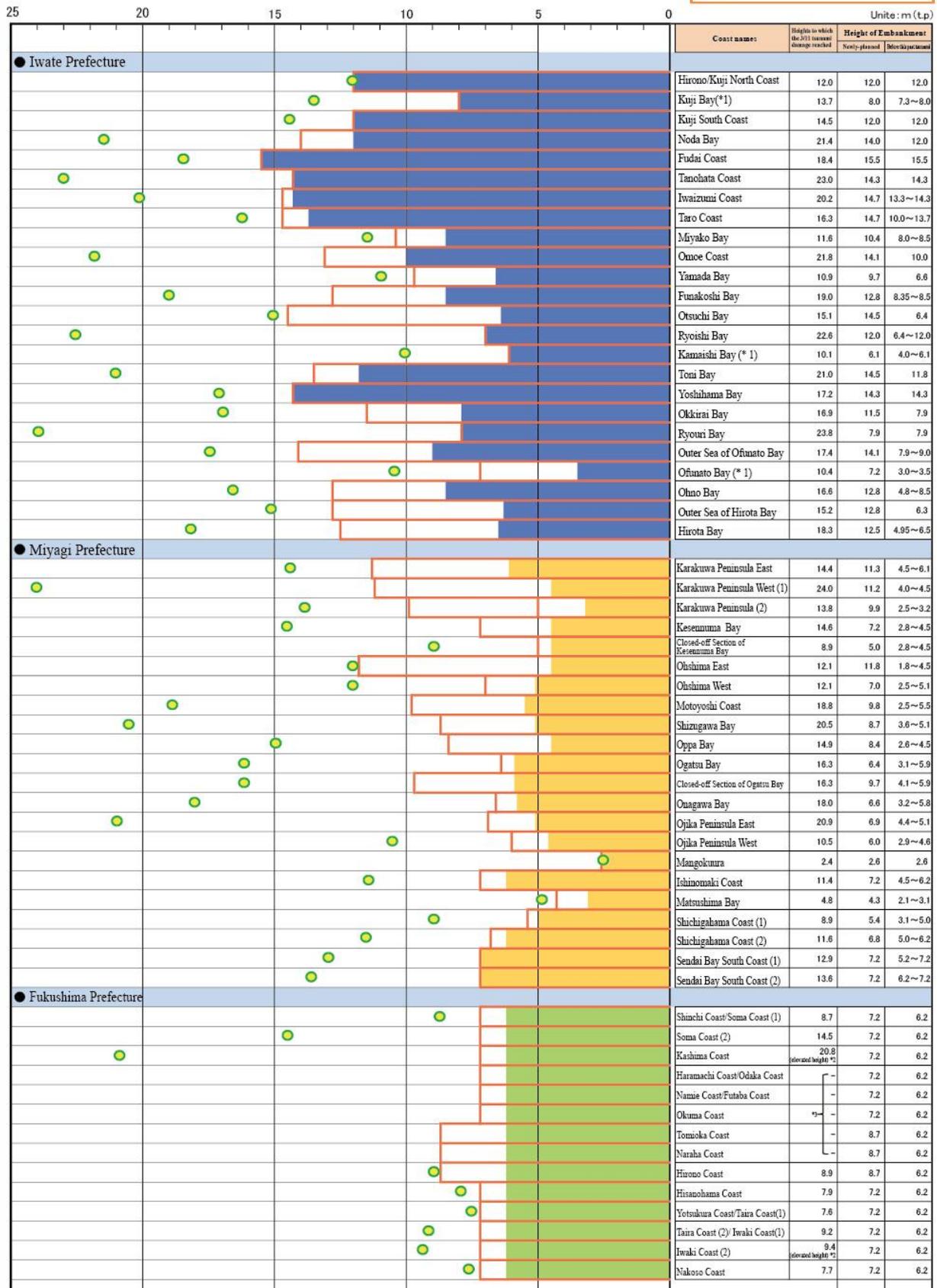
Source: MLIT

Chart. 31 Image of projects to accelerate collective relocation for disaster prevention



Source: MLIT

Chart. 32 Current statuses of setting heights of coastal levees



*1 At Kuji Bay, Kamaishi Bay and Ofunato Bay, measures to be combined with levees at the bay mouths
 *2 Since there are no marks of damage, or such marks are insufficient, the elevated heights (heights to which the tsunami reached from the coastline to the inland)
 *3 Since the area between Haramachi Coast and Naraha Coast is designated as a caution zone (within the 20 km-radius from TEPCO's Fukushima Daiichi Nuclear Power Plant), no investigation about tsunami heights was conducted.

Source: Developed by MLIT from data of Iwate, Miyagi and Fukushima

(Project patterns of reconstruction plans)

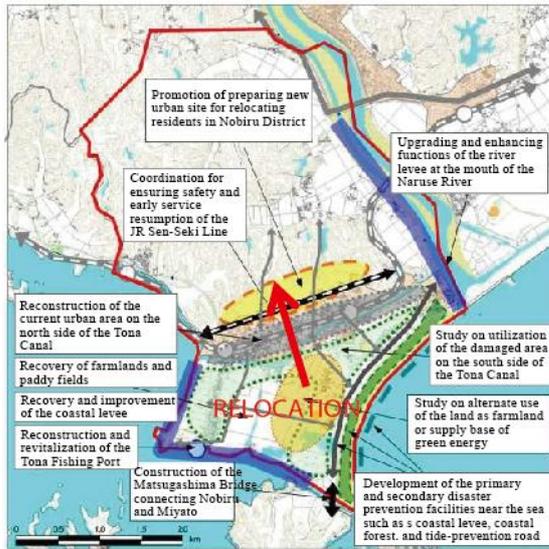
A review of reconstruction plans indicates that many of the measures against tsunami currently considered in the ria coast areas center on relocation to uplands. In the lowland areas, measures mainly feature moving roads, etc., inside the protective lines elevated with embankments or promoting reconstruction within such protective lines. In inland areas, etc., where extensive damage was caused by the collapse or liquefaction of building lots, the plans mainly feature recovery of such lots.

Chart. 33 Patterns of reconstruction plans

Pattern1 Relocation to highlands as a measure against tsunami.

Relocation to a single prepared site lumping together residential areas
[Example: Nobiru District, Higashi-Matsushima City]

[Diagram of Reconstruction Policy in Nobiru Area]

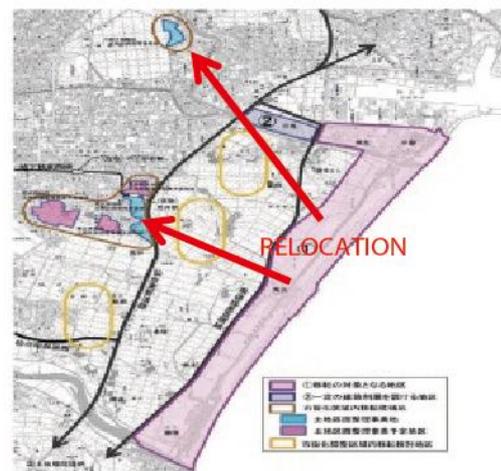


Source: Basic Reconstruction Policy of Higashi-Matsushima City, Miyagi Prefecture

Pattern2 Relocation to inlands as a measure against tsunami.

- As the coastal area is composed of sand beaches, the envisioned projects are to build a protective line by improving roads with elevated ground within the lowland and to relocate to inlands

[Example: Sendai City, Miyagi Prefecture]



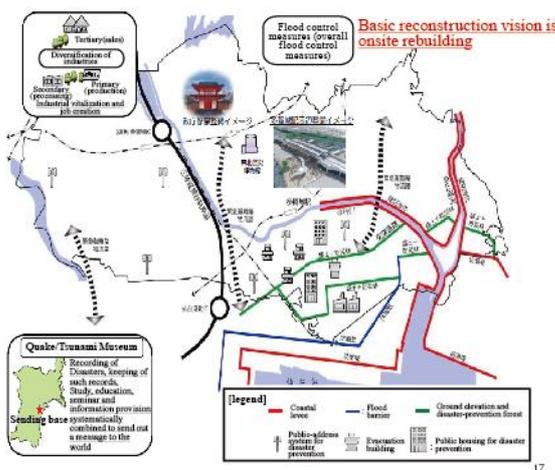
Source: Plan for Reconstruction from the Disaster of Sendai City, Miyagi Prefecture

Pattern3 Onsite reconstruction of residential areas, etc.

-The envisioned projects are to reinforce protective facilities through elevating heights of levees, etc., and to promote onsite reconstruction through elevating ground for roads in the lowlands and elevating housing lots

[Example: Tagajo City, Miyagi Prefecture]

[Image of reconstruction vision]



Source: Plan for Reconstruction from the Disaster of Tagajo City, Miyagi Prefecture

Pattern4 Recovery projects and enhanced measures against tsunami.

- The envisioned projects cover recovery of infrastructures including coastal levees and upgrading facilities related to measures against tsunami such as disaster prevention parks.

[Example: Fudai Village, Iwate Prefecture]

[Reconstruction Plan Map]



Source: Plan for Reconstruction from the Disaster of Fudai Village, Iwate Prefecture

Pattern5 Recovery of houses on collapsed lots in inlands and measures against liquefaction.

Recovery of housing lots damaged by mudslide/collapse and investigation and analyses of the extent of liquefaction as well as repair and reconstruction of housing lots, etc.

[Example: Sendai City (hill section), Miyagi Pref., Kamisu City, Ibaraki Pref. and Urayasu City, Chiba Pref.]

Column Past tsunami damage in the Sanriku area and relocation to uplands

At the time of the tsunami caused by the Meiji Sanriku Earthquake that occurred on June 15, 1895, relocation to uplands was implemented on a limited basis, moving some of the communities or spreading individual households to different places. And with the passage of time, the sense of crisis faded and with a priority given to convenience for livelihood, such as fisheries, people tended to return to the disaster areas.

At the time of the tsunami caused by the Showa Sanriku Earthquake that occurred on March 3, 1933, the victims were those who rebuilt their houses on the same previous premises after the Meiji Sanriku Earthquake, those who came back to their hometown after having relocated to uplands, and those who newly owned lowlands. Therefore, for the reconstruction from the Showa Sanriku Earthquake, large-scale relocation to uplands covering considerably wide areas was organized with financial support from the national and local governments.

	Meiji Sanriku Earthquake (1895)	Showa Sanriku Earthquake (1933)
●Scale	Magnitude 8.2	Magnitude 8.1
●Death toll	Iwate 21,756 persons Miyagi 3,452 persons	1,514 persons 306 persons
●Houses lost/collapsed	Iwate 5,446 houses Miyagi 1,377 houses	4,962 houses 1,611 houses
●Relocation to uplands	Only some communities Iwate 6 places Miyagi 4 places	2,199 houses in 57 communities of 23 cities, towns and villages (87,580 tsubo) 801 houses in 68 communities of 15 towns and villages (64,678 tsubo)

Source: Developed from “Investigation report of tsunami triggered by the Chilean Earthquake” by The Geospatial Information Authority of Japan and the portions covering Iwate and Miyagi extracted from “Tsunami and Village” by Yaichiro Yamaguchi

The lesson from the two tsunamis of 1895 and 1933 - “houses built on upland provide peace and security for our posterity. Remember the horrible damage of the big tsunamis and do not build houses below this point” – is inscribed on “the monument of the big tsunami” located at Aneyoshi in Miyako City, Iwate Prefecture.



Since old houses fell into so severe ruins that it was said that nobody attempted to reconstruct them on the same premises. But then three, four years passed and somebody built a house. In terms of location, it was not ideal for fishing and the rough riverbed and parts of Suga were not optimal farmlands and in terms of convenience, the place was way behind Kogake. Besides, how bad the drinking water was – contents of the analysis were not known but once villagers started to say it was bad, they could not wait any longer and a trend developed among them to return to their native areas. And villages that rebuilt themselves on their original locations were hit in 1933 (Excerpt from “Tsunami and Village” by Yaichiro Yamaguchi.

(Local consensus on collective relocation)

Reconstruction plans are being developed in the disaster areas and the biggest challenge in the future is smooth coordination with residents to obtain their consents in various localities regarding specific implementation of various projects including those for accelerating collective relocation for disaster prevention and those to readjust land. Now, differences in project progress are noted among municipalities primarily due to varied extents in obtaining the residents' consents on collective relocation to uplands or inlands. The main reason is that the victims themselves are required to raise funds to purchase housing lots and build houses. Land prices in their home towns and in new locations are different, with the latter being considerably higher, which places huge burdens on the residents involved.

The national government, with a view to alleviating such burdens, has put in place such measures as (1) moderating interests including programs to reduce interest to zero for the first five years on housing loans advanced to disaster victims by the Japan Housing Finance Agency, (2) raising subsidies to match amounts corresponding to the interest on loans (from ¥4.06 million to ¥7.08 million). Among municipalities that are prime promoters of these projects, some are offering

additional assistance to alleviate the burden on the victims. For example, Sendai City has implemented an alleviating program, which works as follows. With evaluation values of land affected by the tsunami becoming much lower than the pre-Disaster levels, when disaster victims lease land in new locations from the City and build their houses there, the rents corresponding to the sums of differences in evaluation values of affected lots before and after the Disaster and moving expenses related to lost buildings will be exempted for up to a maximum of fifty years in period and ¥10 million yen in amount. And Higashi-Matsushima City is considering an assistance program to offer housing lots in new locations free for the first ten years.

Other challenges pointed out in surveys conducted in Iwate, Miyagi, and Fukushima include the considerable time needed to purchase existing housing lots that are mortgaged and a sense of inequality resulting from different compensation amounts paid to residents whose houses were lost and those whose houses remain.

(Establishing organizations for project promotion)

Chart 35 shows the results of surveys conducted in Iwate, Miyagi, and Fukushima on estimated numbers and scales of projects to readjust land and those to accelerate collective relocation for disaster prevention required to carry out town reconstruction in these prefectures respectively (as of March 1, 2012). The total land area to be readjusted in the projects of the three prefectures comes to a very large expanse of approximately 2,800 ha, which is about ten times larger than 255.9 ha in 20 areas covered under projects to readjust land for reconstruction at the time of the Great Hanshin-Awaji Earthquake.

As to projects to accelerate collective relocation for disaster prevention, the total number of households to be covered in the three prefectures comes to approximately 23,300, which is about seven times larger than the approximately 3,000 households involved in the Showa Sanriku Earthquake and Tsunami (in Iwate and Miyagi), and more than 12 times larger than the cumulative total of past projects since 1972.

Chart. 34 Problems concerning consensus building among residents (from the questionnaires to Iwate, Miyagi, and Fukushima Prefectures)

Iwate	<ul style="list-style-type: none"> - Much time required to build consensus including confirmation of residents' intentions as to where they want to move and how they want to live in residential estates - Since subsidies for relocation and subsidies for alleviating interests on loans to rebuild houses differ among disaster victims due to the provisions in the projects for collective relocation for disaster prevention, in projects for enhancement of disaster prevention performances of fishing villages, etc., there is a sense of inequality among them.
Miyagi	<ul style="list-style-type: none"> - Purchase prices of evacuated lots (values reduced compared with pre-Disaster levels) - Since the removal expenses of buildings lost or dismantled are not covered by the subsidy scheme, there is a sense of inequality within communities. - Since the wishes of land owners (including those living in other municipalities) are diverse, there are not enough municipality employees to handle them. - Since relocation to temporary housings is not arranged by administrative unit, it is all the more difficult to build consensus.
Fukushima	<ul style="list-style-type: none"> - In the case land properties difficult to acquire come into existence since they are to be succeeded or are currently mortgaged, much time is needed for land purchase and payments to disaster victims are delayed. - Since land property purchase scheme for relocation-advised areas is applicable only to housing lots and farmlands owned by disaster victims taking part in the project for collective relocation for disaster prevention, properties purchased/not purchased present patchy patterns, and when progress to utilize evacuated land differs from one project to another, purchases from one land owner must be made in different periods.

Source: MLIT questionnaires to the three prefectures

Chart. 35 Results of questionnaires on projects envisioned by each prefecture as of March 1, 2012

Prefecture	Land readjustment projects		Collective relocation projects for disaster prevention	
	No. of districts	Area (ha) (approx.)	No. of districts	No. of houses (approx.)
Iwate	24	1,000	66	4,000
Miyagi	30	1,600	158	17,300
Fukushima	8	300	44	2,100
Total	62	2,800	268	23,300
(Ref) Land readjustment projects after Hanshin -Awaji Earthquake	20	256		
(Ref) Collective relocation projects (total from '72 onward)			Cumulative total 35	1,834

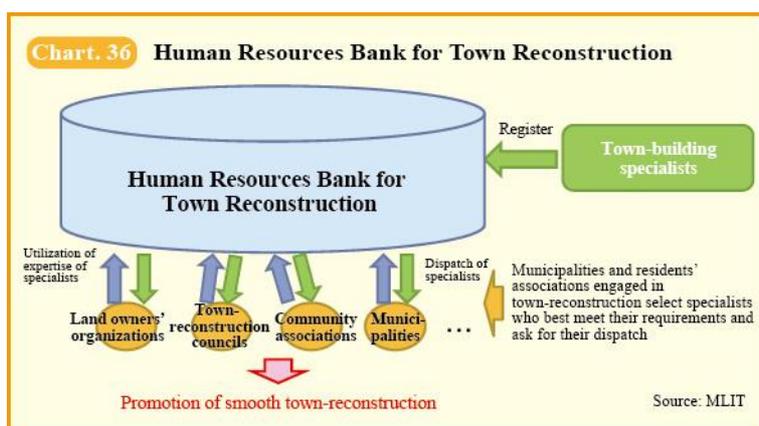
* The above figures are derived from the results of questionnaires to each prefecture and may differ from the actual number of projects undertaken.
 * The total may differ from the aggregate of each line due to rounding of fractions.

Regarding reconstruction of urban areas damaged by tsunami resulting from the Disaster, specialist government personnel are particularly in short supply since projects to readjust land and those to accelerate collective relocation for disaster prevention are expected to account for a large portion of the overall reconstruction design, and since consensus-building among the parties concerned and coordination of differing interests require expertise and experience.

To deal with this situation, Iwate, Miyagi, and Fukushima Prefectures and Sendai City requested MLIT to arrange long-term seconding of local government personnel from all parts of the country so that these municipalities may execute their projects. In response, MLIT requested other prefectures and government-decreed cities to check the availability of such personnel and found out from their responses that some 160 personnel from different parts of the country can be seconded. MLIT coordinated with the sending prefectures and receiving prefectures and started to second personnel in April 2012 (moving up the seconding schedule where possible).

Also, in response to requests from municipalities of the disaster areas, MLIT requested the Japan Housing Finance Agency to mobilize their specialists for providing assistance in the development of reconstruction plans, and as of February 16, 2012, 73 personnel from the Agency have been dispatched to the disaster areas and other places in Iwate, Miyagi, and Fukushima Prefectures.

Furthermore, MLIT has set up a “Human Resources Bank for Town Reconstruction” to provide the disaster areas with information on town-building specialists, which is released on the Internet as well. Thus, the information is made available to municipalities in the disaster areas, and these municipalities, local residents, and councils may easily search data on town-building specialists. As of the end of March 2012, 684 specialists are registered on the database.



5 Securement of local public transportation systems and promotion of tourism

(Securement and maintenance of local public transport systems)

The Disaster caused severe adverse effects on bus and other transportation systems in the affected areas, substantially changing mobility needs there, and securing of transportation systems vital for daily lives of victims accommodated in evacuation centers or temporary houses and other local residents has become a major challenge.

It is important that daily transportation in the affected areas respond to people’s needs, which vary depending on the progress of recovery and reconstruction, and such transportation must be secured without fail. To ensure that such systems in the affected areas are secured and maintained flexibly and properly through the utilization of a scheme to secure and improve local public transportation systems created in fiscal 2011, special measures were taken to moderate qualifications to receive assistance under this scheme and to make related operating procedures flexible and at the same time the necessary funds were allocated in the third supplemental budget of fiscal 2011. These measures have helped secure and maintain services of 121 main line bus routes covering multiple areas and transportation systems covering 29 individual localities. Specifically, for securement and maintenance of main line bus networks, restrictions on the number of passengers were moderated, and subsidies for acquiring buses were provided more flexibly, among other things. These steps will be continued through fiscal 2015 and for securing and maintaining daily transportation systems within different localities, such assistance programs as enabling operations of buses or taxis to respond to needs of different communities and carrying people from temporary housing and their own houses to hospitals, shops, public offices, etc., will continuously be continued through the end of fiscal 2013.

Furthermore, in order to ensure that these steps properly support approaches taken by municipalities, MLIT personnel visit the affected areas, present operating schedules taking into account the traffic conditions of temporary housing, etc., and work in coordinating the views of the parties concerned toward consensus-building.

Case example: Rikuzen-Takata City, Iwate Prefecture

With the completion of a temporary medical center and a temporary store of the local supermarket, the routing of the existing bus service was changed to run on the inland side, where these temporary facilities have been built, from the ocean side that was damaged by the Disaster. Furthermore, operation of share-ride taxis was started to provide daily transport to residents living in temporary housing.

Case example: Onagawa Town, Miyagi Prefecture

With the start of bus service to substitute for the JR Ishinomaki Line idled due to the Disaster, another bus service to cover the route between the evacuation center and a bus stop of the substitute bus was started. Subsequently, in line with the progress in town-reconstruction including the building of temporary stores, etc., the operating route was changed and more services are now offered, with buses for townspeople running between the temporary city office relocated to an upland area and temporary stores as well as temporary housing.



Share-ride taxi of Rikuzen-Takata



Townspeople bus of Onagawa

Out of the railway recovery projects in the coastal areas that were extensively damaged, it was decided that for the Sanriku Railway the national government would cover a majority portion of its recovery expenses with funds so earmarked in the third supplemental budget of fiscal 2011 and the fiscal 2012 budget. This helped draw the roadmap for recovery and full-scale recovery projects were started in November 2011, and operations will be resumed in stages as these projects are completed in sections and ultimately these operations are expected to resume around April of 2014.

Furthermore, regarding the six damaged lines of JR East Japan (Yamada Line, Ofunato Line, Kesennuma Line, Ishinomaki Line, Sen-Seki Line and Joban Line) for which recovery together linked with town-reconstruction is deemed necessary, MLIT has supported coordination among the railway operators and municipalities concerned through the “Reconstruction Coordination Council” set up for each line (whose members are representatives from the municipalities concerned, JR, Tohoku Regional Development Bureau, Tohoku Transport Bureau, and Reconstruction Agency).

As a result, an upgrade project and related work to protect coasts between Watanoha and Onagawa Stations of the Ishinomaki Line were undertaken, and operations are scheduled to resume in the early part of 2013 except at Onagawa Station. Between Takashiro and Rikuzen-Ono of the Sen-Seki Line, reopening of the entire line is scheduled within 2015 with a route change and other steps. Between Soma and Watari of the Joban Line, operations will be resumed in approximately three years with route changes and other steps. For the Kesennuma Line, temporary recovery with BRT^{note} will be made possible.

As for the Yamada Line, the Ofunato Line, and the Kesennuma Line, reconstruction and improvement plans including route changes will be developed in the future, along with the relocation plans of urban areas, on which the recovery policy will be based.

Note: 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.

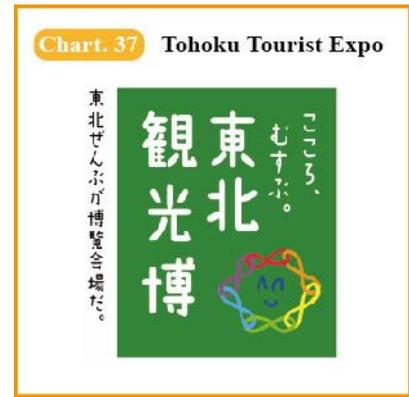
(Promotion of tourism via Tohoku Tourist Expo and other programs)

With a view to revitalizing domestic tourism demand, which has sharply declined nationwide after the Disaster, efforts are being made both by the public and private sectors to stimulate potential travel demand by creating momentum with “Ganbaro, Japan,” a promotional campaign for domestic travel and monitoring tours.

Also, the public and private sectors are working together to stimulate travel demand for the Tohoku region, which saw a particular decline in tourism. Toward that end, a campaign dubbed “Tohoku Tourist Expo,” which deems the entire Tohoku region as an expo venue, has been launched and a new tourist style to accelerate exchanges between local residents and tourists has been developed.

Specifically, various initiatives are put in place; means to send more tourists to the Tohoku region are enhanced, and with 28 major tourist areas serving as cores in the “zones,” “local tourist guides” who are familiar with their hometown attractions are arranged, “travel salons” where such local guides welcome tourists are set up, provision of unique staying programs in different areas is promoted, “Tohoku passports” are created to encourage encounters between local residents and tourists, and a “portal site” is set up to provide integrated tourist information. The basic objective of these programs is to first get the number of tourists visiting the Tohoku region back up to the pre-Disaster level. Then, efforts will be continued to get the number above this level, and to establish schemes to create an affordable and enjoyable traveling environment that offers a high degree of freedom to a wide spectrum of tourists, which may be promoted on a sustainable basis under the leadership of the localities involved.

In addition, campaigns to induce tourists to visit the Tohoku and North Kanto regions and assist the regional reconstruction were fully launched at the end of March 2012 through execution of government-sponsored projects and utilization of events sponsored by the private sector encouraging such visits.



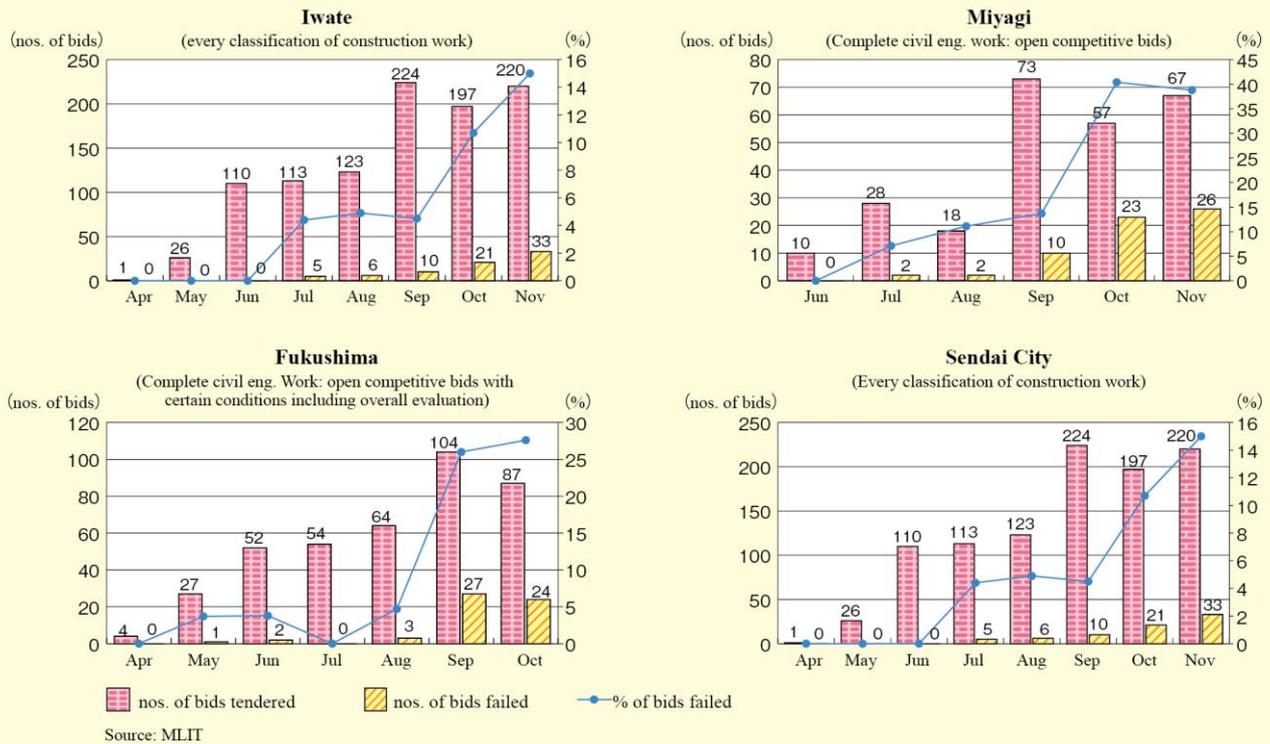
6 Smooth promotion of reconstruction projects

(Ensuring smooth execution of projects)

As recovery and reconstruction projects go into full swing, workers with construction skills have been short in Iwate, Miyagi and Fukushima Prefectures since July of 2011. In October of 2011, the shortage became so acute and public bids without winning contractors rose in number due to increased labor costs, which jeopardized smooth execution of projects.

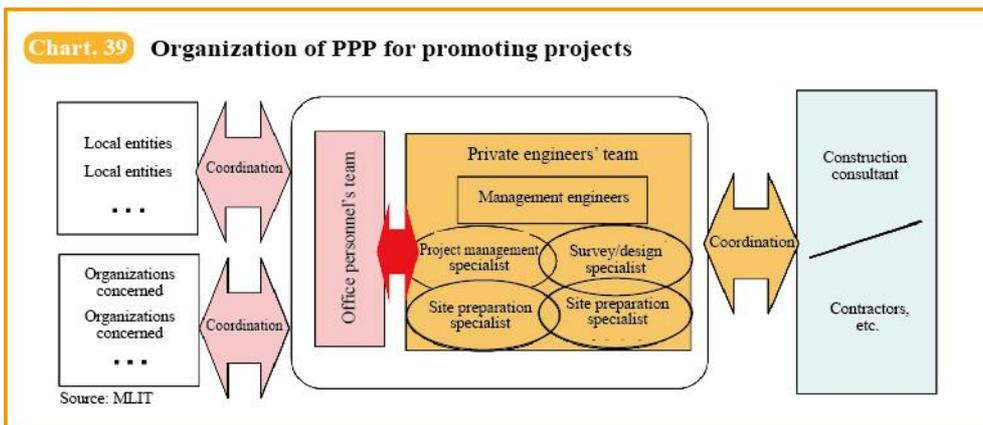
To deal with such circumstances, MLIT organized in December 2011 the “Liaison Council for Smooth Execution of Recovery and Reconstruction Projects” with its members comprising of the state, Iwate, Miyagi and Fukushima Prefectures and Sendai City as well as such construction groups as Japan Federation of Construction Contractors (an incorporated association) and National Construction Contractors Association (a general incorporated association). Through this council, 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 of human resources required for reconstruction and development of proper integration values. In February, 2012, steps including the following were taken; (1) based on surveys of construction industries and results of statistical surveys, labor unit cost for designing of public projects are revised so as to timely reflect current labor cost levels, and (2) lead engineers are allowed to cover multiple projects in the affected areas at the same time as long as they are related and close to each other.

Chart. 38 Bid Results in Iwate, Miyagi, and Fukushima Prefectures and Sendai City



(Utilization of PPP for promoting projects)

In such new recovery projects as building reconstruction roads including the Sanriku Coastal Road, PPP^{Note} for relevant promotion has been introduced to maximize the technical capabilities of the private sector. Under the PPP scheme, a team of private-sector engineers (composed of respective experts of “project management,” “survey and design,” “site-development” and “construction”) will help the owner in preparatory work prior to construction, which was previously undertaken by the owner alone, study and decide on the optimal method for promoting the project concerned. Specifically, new roads to be built will be divided into sections of 10-20 km, and a team of private-sector engineers will be assigned to each section, and they will stay in contact with their office and promote the project. This will lead to smooth promotion of reconstruction road projects or their early improvement.



(Improvement of hardware to match resumption of economic activities in the affected areas)

Regarding such facilities as railways and sewage plants, it is necessary to consider such factors as locations, necessity of route changes, and scales in line with the progress of town-reconstruction. Also, regarding such infrastructures as ports and coastal levees, reconstruction should keep pace with re-establishment of industries in the backlands and restoration of sewage facilities and should be advanced in stages, starting with what is needed most. Efforts to invite companies to special industry-revitalization zones for creating new demand following reconstruction demand have been launched and the future challenge is to promote improvement of such hardware as various infrastructures in line with resumption of economic activities.

Note: PPP: Public Private Partnership

Column Support toward revitalization of the shipbuilding industry

In various parts of the Tohoku region, there are many small and medium enterprises engaged in building, repairing, and servicing different types of fishing vessels used in the region, and in collaboration with such related industries as maintenance and electric contractors, they have supported the progress of the local fishery, a key industry of the region.

The Disaster caused devastating damage to all the 37 shipbuilders and many of the related industries situated along the Pacific Coast in the region. More than 20,000 vessels were swept away or broken, and for early revitalization of local fishery operators severely afflicted, recovery and reconstruction of the shipbuilding industry in the region is more vital than anything else.

Therefore, MLIT, in cooperation with such related ministries and agencies as the Small and Medium Enterprise Agency, provided assistance through the use of “supporting projects for recovery and reconstruction (grouping) of small and medium enterprises” and assistance in procurement of supplies and machines required for early recovery of equipment. Such efforts have helped put 33 out of the 37 shipbuilders back in operation- albeit on a limited basis- as of February 2012. Also, with a view to revitalizing shipbuilders concentrated in the region and further expanding them in the future, MLT provided such additional assistance as making plans for common and efficient use of facilities and execution of “the project to facilitate the consolidation and upgrading of the local shipbuilding industry” through seminars for improving relevant skills, etc.



Launching ceremony at a restored shipyard

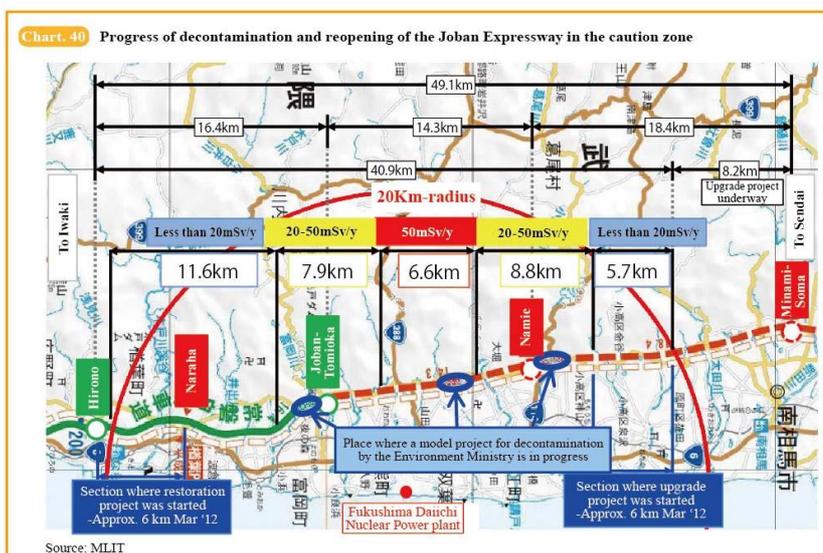
7 Reconstruction and revitalization of Fukushima

MLIT is in the process of promoting reconstruction and revitalization of Fukushima Prefecture damaged seriously and extensively by the nuclear power plant accident. As of May 2012, evacuees who are staying within Fukushima Prefecture total approximately 96,000 and those who have moved out of the Prefecture total approximately 62,000, making the grand total of people still forced to live as evacuees approximately 159,000. As the demarcation of the caution zone is to be reviewed in the future, it will be necessary for MLIT to make unified studies within the national government on such critical issues as decontamination and improvement of infrastructures, and coordinate with municipalities in order to facilitate evacuees to return home.

Particularly, regarding the Joban Expressway in the caution zone, a joint team of the ministries and agencies and the East Nippon Expressway Company for developing measures against radiation has been established for early restoration and resumption of service. In areas where the radiation does is 20 mSv or lower/year, the reconstruction project was started in March 2012 and in areas where the dose is 20 mSv or higher/year, the reconstruction project and decontamination will be started considering the results of the decontamination model project launched by the Ministry of the Environment in March 2012.

Also, based on the “Act on Special Measures for Reconstruction of Fukushima” enacted on March 31, 2012, the national government is set to develop reconstruction and revitalization plans for the areas including the removal of evacuation orders, undertake on behalf of the Prefecture projects to build public facilities (roads, rivers, etc.) and execute projects to improve people’s living environment aimed at recovering functions of public facilities through cleaning them, etc.

In addition, the Act will secure stable places for evacuees to live with special exceptions on qualification to enter public housings.



(Measures against radioactive substances in sewage facilities)

Radioactive substances released by the accident at Fukushima Daiichi Nuclear Plant of Tokyo Electric Power Company (TEPCO) were accumulated on land surface of residential areas, and particularly through the combined sewage systems (that collect both rainwater and soil water), such substances flowed into the sewage treatment plants when it rained. They were condensed in sludge in the process of treatment, and were detected in sewage sludge or in its incinerated ash. Thus, the use of sludge for construction material such as raw stock for cement or for agricultural products as compost had to be suspended.

Since it was not assumed under the current act that radioactive substances would spread out of the premises of the nuclear plant, the Nuclear Disaster Countermeasure Office headed by the prime minister made public “views on temporary treatment of byproducts of water and sewage treatment plants from which radioactive substances have been detected” on June 2011 and later in December of 2011, the Ministry of the Environment issued “the guidelines regarding wastes”. Then, on January 1 2012, “the special act to deal with environmental contamination due to radioactive substances emitted from the nuclear power plant accident caused by the Great East Japan Earthquake (the special act to deal with contamination of radioactive substances)” featuring two main measures against “decontamination” and against “polluted wastes” took full effect.

MLIT held a “study council regarding measures against radioactive substances in sewage facilities” jointly with the Japan Sewage Works Association (a public interest incorporated association) in June 2011, discussed such matters as clarification of behavior of radioactive substance in sewage treatment plants and prediction of future developments, effects on the surrounding environment, effective information provision and control methods including measures for volume reduction of sludge, and issued an intermediate report summarizing the current findings on November 25, 2011.

Under the special act to deal with contamination of radioactive substances, wastes that contain over 8,000 becquerel of radioactive cesium and are so designated by the national government will be treated as designated wastes. Under the basic policy set forth, (1) out of the designated wastes, sludge generated in public sewage facilities and river-basin sewage facilities will be treated by the Ministry of the Environment in cooperation with MLIT, (2) treatment of designated wastes will be undertaken by prefectures and cities from which such wastes are emitted, and (3) in order to promote recycling wastes, as long as their safety is confirmed, utilization of recycled products (cement, recycled crushed stone, etc.) out of the wastes should be promoted to the extent possible. Proper treatment is expected to be implemented under this act.

Chart. 41 Stored quantities of dried sludge (as of February 3, 2012)

Prefectures	Cumulative quantities (t)
Iwate	Approx. 590
Miyagi	Approx. 22,000
Akita	—
Yamagata	—
Fukushima	Approx. 30,000
Ibaraki	Approx. 3,000
Tochigi	Approx. 2,600
Gunma	Approx. 5,300
Saitama	Approx. 9,500
Chiba	Approx. 1,100
Tokyo	Approx. 3,300
Kanagawa	Approx. 19,000
Yamanashi	Approx. 240
Nagano	Approx. 1,000
Niigata	—
Shizuoka	—
Total	Approx. 97,000

Source: MLIT

Section 2 Changes in public awareness after the Disaster

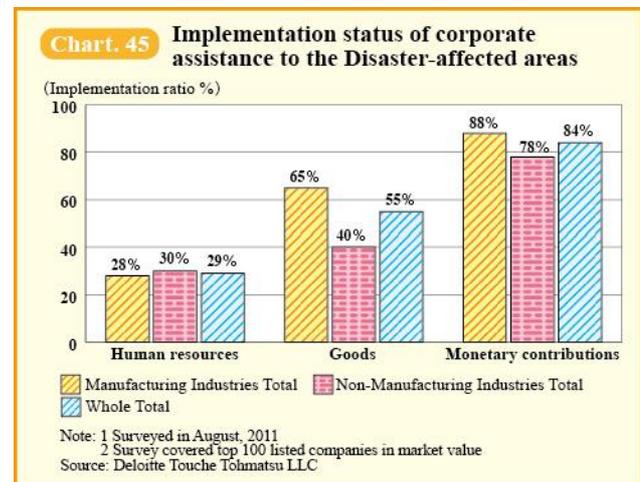
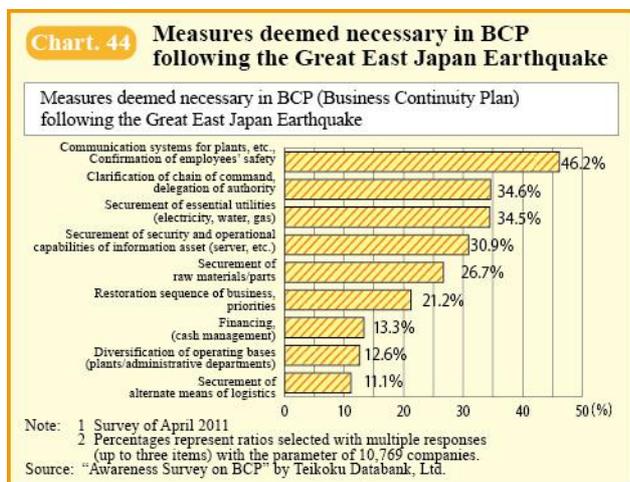
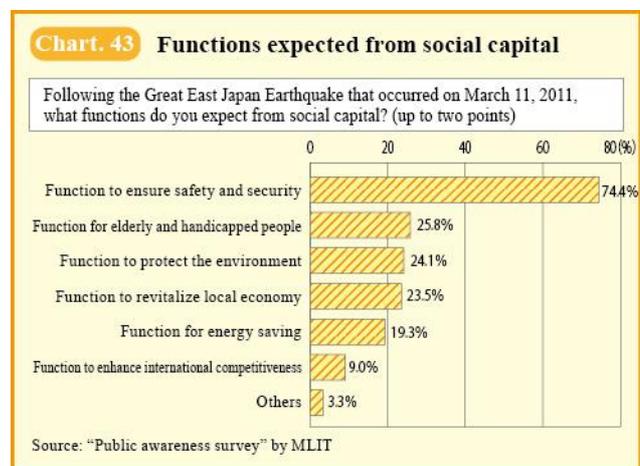
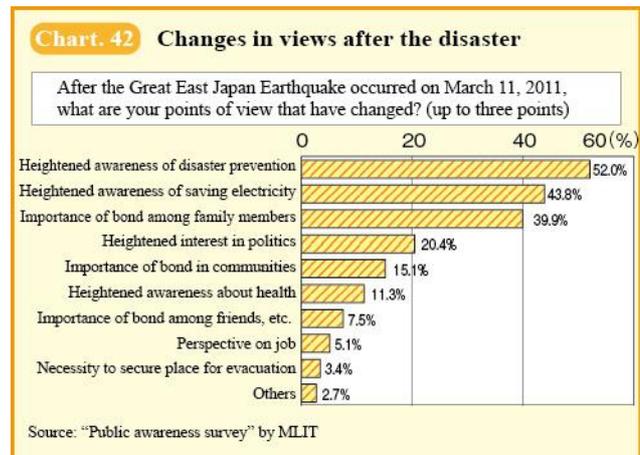
(Changes in public awareness)

The Disaster, which was of an unprecedented scale, drastically changed the public awareness of disaster prevention. According to a public awareness survey (hereinafter “the public awareness survey” (note)) conducted by MLIT between late January and February 2012, in which a question regarding “changes in views after the Disaster” was posed, the most popular response was “heightened awareness of disaster prevention” (52.0%), followed by “heightened awareness of saving electricity (43.8%) and then “importance of bond among family members” (39.9%). As to “functions expected from social capital,” the most popular response was “function to ensure safety and security” (a whopping 74.4%), followed by “function for elderly and handicapped people” (25.8%) “function to protect the environment” (24.1%), “function to revitalize local economy” (23.5%), and “function for energy saving” (19.3%), with the second through fifth-ranked responses closely bunched together.

(Heightened awareness of disaster prevention in companies)

The Disaster broke supply chains and had enormous adverse effects on economic activities of the private sector, as exemplified by production cuts, etc. Therefore, on the corporate level as well, heightened awareness of disaster prevention and moves to enhance systems to allow continuity of business at the time of emergency are noted. Specifically, in the Bank of Japan’s Sakura Report (October 2011) it is pointed out that there are moves to organize production bases at multiple sites; to relocate or redeploy plants and other facilities from the standpoint of redundancy; to develop multiple supply sources; and to accumulate inventories, among other things.

In addition, after the Disaster, based on the concept of CSR (corporate social responsibility), some companies provided assistance in the form of dispatching their personnel to the affected areas, on top of contributing money and supplying goods. And some companies used this opportunity to set up a system of volunteer leave. Various types of approaches including the following were noted; some companies sent teams composed of their staffs from different departments to the affected areas; other companies provided assistance to NPOs in their efforts to develop strategies; and others arranged activities during lunch break.



Note : The survey was conducted via the Internet during January and February of 2012 targeting males and females aged 20 years and older, and 4,000 persons responded. In order to eliminate possible bias attributable to regions, generations, and sexes, the percentages are allocated according to the population structure.

(Growing concern about disaster risks of real estate and energy-saving functions)

After the Disaster, concern about disaster risks of real estate is growing. According to a “report on the price trend of highly-utilized land in major cities” (the third quarter of 2011), growing concern about disaster risks is noted with such phenomena as falling demand for land along the coasts and bays and for upper stories of high-rise condominiums not only in the disaster areas in the Tohoku region but also in the Tokyo area, and anxieties about quake resistance of used housing.

Chart. 46 Growing concern about disaster risks of real estate

- Excerpt from the report on the price trend of highly-utilized land in major cities (Q3 of 2011)
- Due to the effects of the Great East Japan Earthquake, the popularity of higher stories (20th ~30th) is declining. (Saitama City, Saitama Pref.)
- Due to the effects of the Great East Japan Earthquake, the popularity of coastal areas is sharply falling and relocation demand from coastal areas to hillside areas is becoming more noticeable. (Chiba City, Chiba Pref.)
- Many people have expressed concern about the quake resistance, etc., of pre-owned condominiums. (Shinagawa Ward, Tokyo)
- Interest in quake resistance, etc., is strong and when we hold seminars, we receive many questions about hazard maps and land history. (Shinagawa Ward, Tokyo)

Also, in the public awareness survey of this time, performances of houses that respondents attached importance to were “houses that are strong against earthquakes with anti-seismic or seismic-isolation devices” (67.5%), followed by “houses that are excellent in energy saving” (54.0%).

The survey conducted by the Japan Housing Finance Agency in October 2011 targeting borrowers of private housing loans also indicated that people attach importance to “seismic performance” and “energy-saving performance.” Out of the respondents who said that they were willing to upgrade these performances even with increased costs, approximately 80% of respondents said that they would accept cost increases of up to 5 – 10%.

Chart. 47 Housing performance items considered important – later -

What do you think are important housing performance items? (up to three)

Housing Performance Item	Percentage
Houses that are strong against earthquakes with anti-seismic or seismic-isolation devices	67.5%
Houses that are well-ventilated, well-lit and excellent in energy saving with proper insulation, etc.	54.0%
Houses that last long with durable walls, easy-to-maintain piping systems and electric equipment, etc.	27.4%
Houses that are safe from crimes and have doors and windows equipped with security devices, etc.	26.5%
Houses that are barrier-free to enable elderly people and children to enjoy a safe living	21.2%

Source: “Public awareness survey” by MLIT

Chart. 48 Readiness to bear higher costs for quake-resistance performance and energy-saving performance

Acceptable cost increases for higher quake-resistance performance (N=492)

Cost Increase Category	Percentage
Up to 5% inc.	39.2%
Up to 10% inc.	38.8%
Over 10%	14.6%
Can't accept	7.3%

Acceptable cost increases for higher energy-saving performance (N=227)

Cost Increase Category	Percentage
Up to 5% inc.	36.6%
Up to 10% inc.	41.4%
Over 10%	14.5%
Can't accept	7.5%

Note: The extent of cost increases (%) as opposed to planned purchase prices of houses (Survey covered 1,038 borrowers of private-sector housing loans)

Source: Developed by MLIT from “Fact-finding survey of borrowers of private-sector housing loans (second round)” of the Japan Housing Finance Agency

Section 3 A Shift in Land, Infrastructure, and Transport Administration after the Earthquake

The Great East Japan Earthquake changed our country. The magnitude of damage caused by the tsunami far exceeded our assumptions, and videos of the disaster spread quickly throughout not only Japan but also the rest of the world.

As described in the preceding section, the earthquake also changed the national and corporate awareness of the need to prepare for disasters. Furthermore, the accident at the nuclear power plant will substantially transform energy policy and the energy initiatives that have been promoted in the past.

Based on this experience, in its land, infrastructure, transport and tourism administration, the Ministry is advancing new initiatives to ensure sustainable and energetic national land and regional community development by establishing closer cooperation among different departments in its organizations, with related government agencies, and with regional communities while taking into consideration changes in the national awareness caused by the earthquake.

This section describes such shifts in land, infrastructure, and transport administration.

1 Change in disaster preparedness

(Tsunami disaster management by infrastructure development and other measures)

The previous tsunami measures assumed such levels of tsunami that have occurred repeatedly in the past and are highly likely to happen in the near future. The massive tsunami caused by the March 11 earthquake far exceeded such assumptions, causing enormous damage. It was recognized anew that with breakwaters alone, it is difficult to protect towns behind them from tsunami that rarely occurs but is colossal in scale, and that there is a limit to depending on the disaster-prevention functions of such structures though they are effective to a certain extent in lowering the height of the tsunami, delaying it from reaching towns, and maintaining the coastline as observed in the tsunami this time.

After the earthquake, various discussions were held at meetings of the Central Disaster Management Council, Reconstruction Design Council, and other organizations, and on July 6, 2011, the planning group of the transport policy committee under the Council for Social Infrastructure compiled its emergency proposals on city planning policy for tsunami and disaster prevention. Based on the recognition that there is no upper limit to disaster, these emergency proposals consider “human life” as the most important of all and make “multiple defenses,” which takes all kinds of measures, the basic principle to prevent tsunami disaster and reduce tsunami damage.

This policy was also included in the government’s “Basic Policy for Reconstruction from the Great East Japan Earthquake”.

The Central Disaster Management Council organized a group of experts to investigate earthquake and tsunami measures using the lessons learned from the Great East Japan Earthquake and published a final report in September 2011. In this report, the Council basically assumed two levels of tsunami according to the scale and frequency of tsunami in order to devise future tsunami measures.

Level 1 tsunami refers to one with a relatively high frequency (which occurs roughly once in tens of years to over a hundred years). In order to cope with this level of tsunami, in addition to protecting human life with such structures as facilities to preserve the coastline, the report recommends that the government should protect the property of residents, stabilize the economic activities of local communities, and maintain production bases effectively.

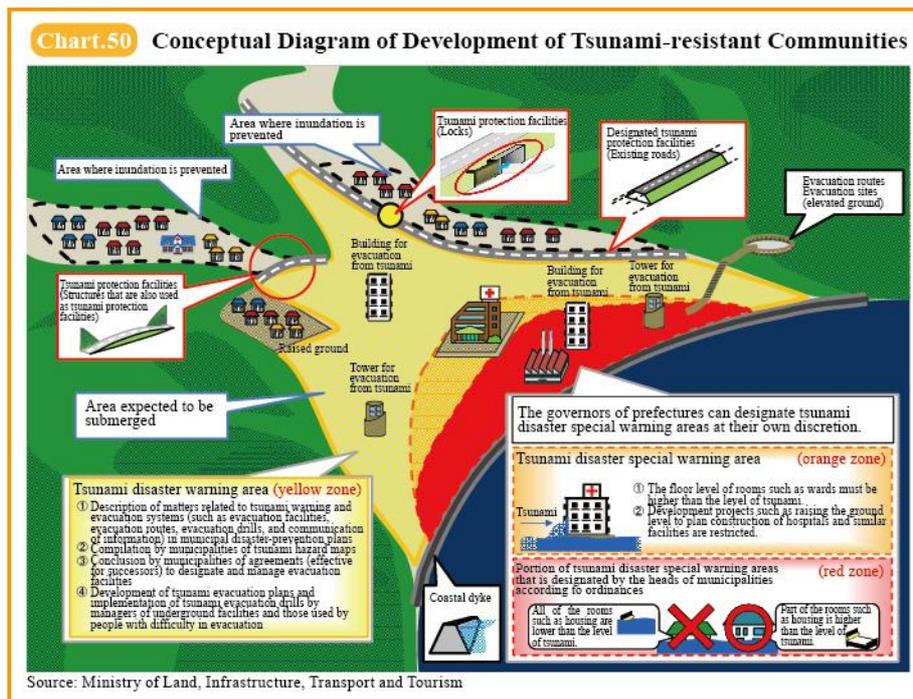
Level 2 tsunami relates to one of the largest class which occurs quite rarely but causes tremendous damage (which occurs roughly once in hundreds of years to a thousand years). In order to cope with this level of tsunami, based on the concept of “disaster reduction,” which focuses on minimizing damage, the report recommends that the government should establish comprehensive tsunami countermeasures including all measures. One example of the former is to develop facilities to preserve the coastline, and that of the latter is to compile detailed hazard maps.

Chart. 49 Policy for Future Tsunami Assumptions

	Frequency of occurrence	Policy
Level 1	Occurring roughly once in tens of years to over a hundred years	In addition to protecting human life, the government should develop or improve coastline preservation and other facilities from the viewpoint of protecting the property of residents, stabilizing the economic activities of local communities, and maintaining production bases effectively.
Level 2	Occurring roughly once in hundreds of years to a thousand years	The government should establish comprehensive tsunami measures using all possible resources, giving top priority to the protection of the lives of residents, etc., and focusing on their evacuation.

Source: This table has been created using a report of the group of experts organized by the Central Disaster Management Council to investigate earthquake and tsunami measures using lessons learned from the Great East Japan Earthquake (September 28, 2011).

(Enactment of laws to develop tsunami-resistant communities)



In December 2011, based on these policies, the Act concerning the Development of Tsunami-resistant Communities (Law No. 123 of 2011) was established to promote development of tsunami-resistant communities based on the concept of multiple defenses. Based on the principles of “Human life is most important” and “There is no upper limit to disaster” and premised on the rule of “running away,” the concept of multiple defenses, targeting tsunami of the largest class, combines infrastructure development and other forms of measures from the perspective of disaster reduction.

In promoting development of tsunami-resistant communities based on the Act, in accordance with basic policy formulated by the Minister of Land, Infrastructure, Transport and Tourism, the governors of prefectures assume areas that may be inundated by tsunami and the level of water that may cover these areas as a basis to implement tsunami-resistant community development plans. In conducting simulations of inundation by tsunami for such assumptions, the governors are required to make calculations on the assumption that tsunami of the largest class occurs under unfavorable conditions taking into consideration examples of dykes and levees being destroyed as found in the devastation caused by the Great East Japan Earthquake.

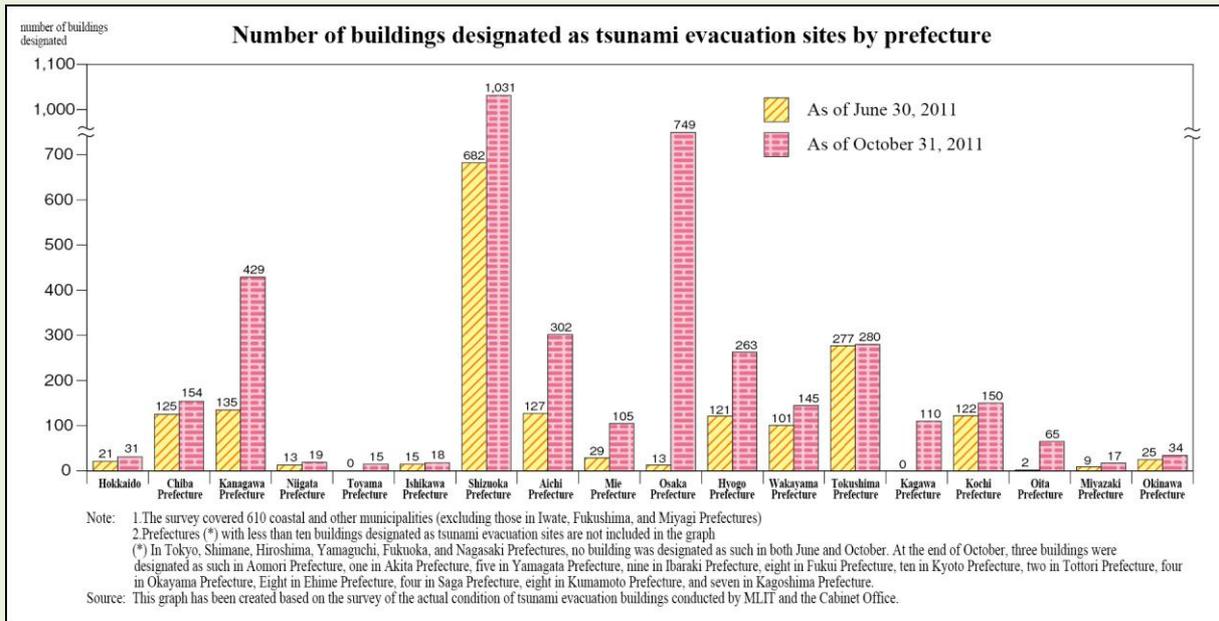
Based on such assumptions of inundation by tsunami, the governors are then required to draw up disaster-prevention promotion plans for municipalities under their jurisdiction, which combine infrastructure development and other forms of measures, implement projects and administrative work included in the plans, apply special measures to planned areas, and manage facilities to protect residents from tsunami. They are also required to designate tsunami disaster warning areas where warning and evacuation systems should be established and tsunami disaster special warning areas where restrictions are placed on construction of certain types of structures and development projects aimed at such construction. By combining all these measures appropriately and in a comprehensive way according to the circumstances of the communities under their jurisdiction, the governors should take measures to cope with tsunami of the largest class efficiently and effectively.

In addition, the Act creates projects to improve facilities for protecting communities from tsunami, that provide subsidies when locks, parapet levees, and other structures that utilize existing roads and railways built on the raised ground to prevent areas behind them from inundation are built or improved on certain conditions (This applies only to projects included in promotion plans as stipulated in the Act).

Column

A Rapidly Increasing Number of Buildings Are Designated as Tsunami Evacuation Sites.

According to a survey conducted by MLIT and the Cabinet Office, a rapidly increasing number of buildings have been designated by local governments as tsunami evacuation sites since the earthquake of March 11, 2011. The number more than doubled from 1,876 at the end of June 2011 to 3,986 at the end of October of the same year, suggesting that a growing sense of crisis was shared by coastal municipalities. In particular, the rise in the number was remarkable in such prefectures as Kanagawa, Shizuoka, and Osaka, which are concerned about tsunami caused by massive earthquakes.



Column Height of Tsunami — There Is No Upper Limit to Disaster

In the past, there have been various views of the level of tsunami (when it reached the coast) caused by earthquakes with the Japan Trench and its vicinity as their epicenter. According to the Central Disaster Management Council's Report on the Meiji Sanriku Earthquake and Tsunami in 1896, an earthquake that occurred off the Sanriku coast caused 38- to 39-meter-high tidal waves at Shirahama, Ryori.

The Great Meiwa Tsunami, which devastated the Yaeyama Archipelago, including Ishigaki and Miyako Islands in 1771, killing or leaving missing some 10,000 people, reached a height of 85.4 m in Miyara Village according to the document that described the situation of villages when it struck them though it does not include accurate records of tsunami heights. The credibility of its descriptions is not necessarily clear, but it is inferred that extremely high tsunami struck the islands, and even today, some large stones brought by tsunami from coral reefs are left on the shore in the Archipelago, telling the extraordinary height of tsunami at that time (source: *Yaeyama no Meiwa-o-tsunami* (Great Meiwa Tsunami in Yaeyama),” written by Kiyoshi Makino).

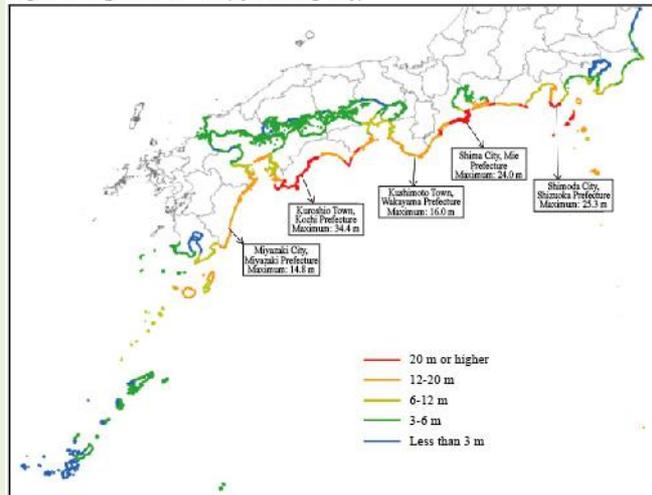
On March 31, 2012, meanwhile, the Cabinet Office published the distribution of seismic intensity, and the height of tsunami, expected when a huge earthquake occurs along the Nankai Trough. In this report, taking into consideration the lessons learned from the Great East Japan Earthquake, it estimated the highest possible tidal waves considering all possibilities such as earthquakes' and tsunami's wide-area destruction mechanisms, presenting basic materials to examine disaster-prevention measures.

Tsunami stones left on the shore of Shimoji Island



Source: MLIT

Expected Highest Tsunami (by Municipality)



Source: This map has been created using materials from the Cabinet Office.

(More effective tsunami measures for public facilities)

(1) Review of coastal dyke designs

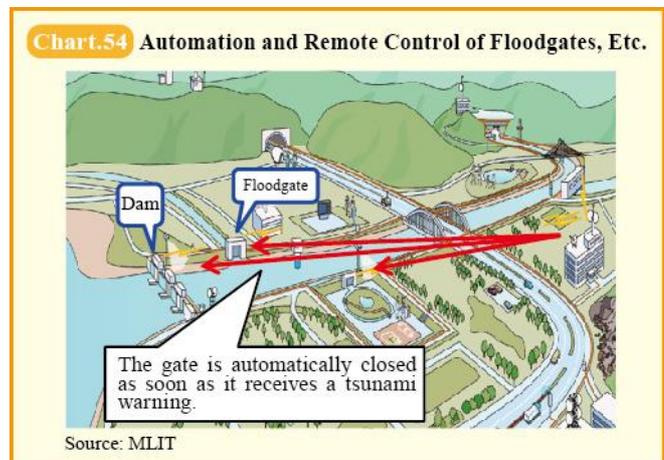
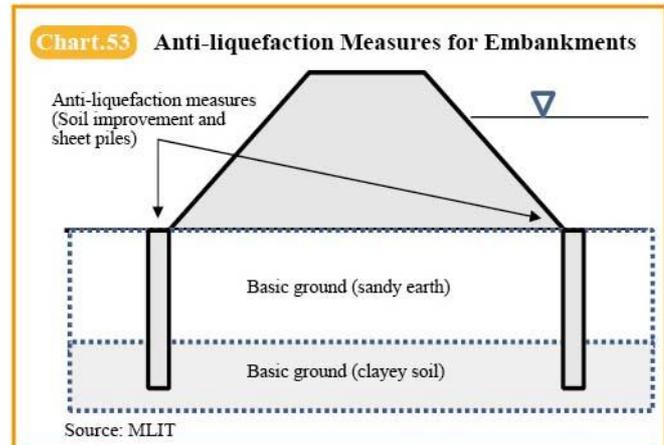
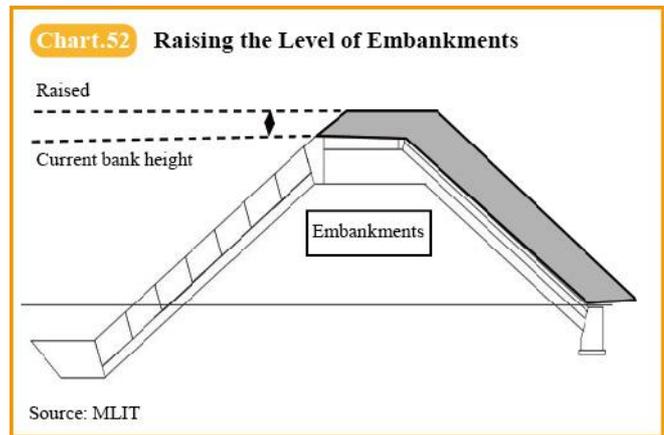
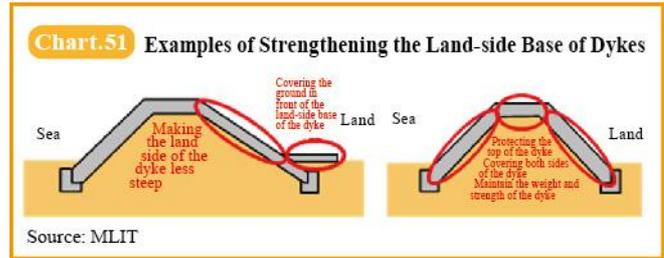
After the Great East Japan Earthquake, tsunami climbed over coastal dykes and other structures, devastating many facilities and causing tremendous damage to the areas behind them. In December 2011, taking this fact into consideration, the Ministry announced its basic policy for measures to make coastal dykes and other structures earthquake-resistant so that they persistently fulfilled their functions even if tsunami exceeded the maximum permissible design heights. After the currents of tsunami climbed over the coastal dykes, they hit the ground in front of the land-side base of the dykes, eventually washing away the facilities. For this and other reasons, the basic policy requires the land-side base of dykes to be covered for protection and coastal dykes to be reinforced by making their land side less steep and therefore more endurable.

(2) Measures to make rivers earthquake-resistant

After the massive earthquake, tsunami went upstream along rivers and went over their levees, causing enormous damage to the areas along the rivers, and in addition, many river management facilities were hit by tsunami as exemplified by the liquefaction of levees. Taking this damage into account, as a measure to prevent tsunami from going upstream along rivers, MLIT is pushing forward with plans to raise the level of levees at locations in two areas where they are not high enough. One of the two areas is the Tokai area where a huge earthquake is expected to occur in the future and stronger measures are being taken to prevent disasters resulting from earthquakes, and the other is the Tonankai and Nankai areas where disaster-prevention measures are being taken for possible huge earthquakes.

In many estuaries and their vicinities, the water level of rivers at normal times is higher than the ground level, and it is feared that if a massive earthquake occurs and tsunami caused by it goes upstream along rivers, they would cause enormous flood damage. Therefore, the Ministry is taking measures to prevent liquefaction from occurring to such rivers.

Furthermore, in order for dykes and levees to fulfill their functions, it is necessary to ensure that the floodgates, sluice ways, and other facilities installed along the dykes and levees are operated without fail before the tsunami goes upstream. On the other hand, the operation of floodgates and other facilities while the tsunami is expected to arrive soon involves danger. After the recent earthquake, some of the dykes and levees were not operated in time, and some of their operators died from the tsunami. For this reason, the Ministry is striving to ensure that floodgates and other facilities can be operated automatically or via remote control.



Column Damage to Levees Due to the Liquefaction of Their Body

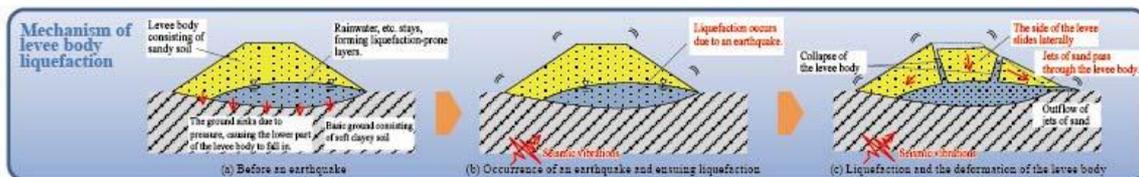
The Great East Japan Earthquake hit levees and similar facilities in wide areas from the Tohoku to Kanto regions, and the number of stricken points exceeded 2,000. The cause of extensive damage was liquefaction, and the distinctive features of the earthquake such as the intensity and length of seismic vibrations as well as the number of such vibrations repeated is estimated to have triggered liquefaction.

One form of damage to levees due to liquefaction is the liquefaction of the basic ground as has been expected since early on, and in addition, many levees suffered damage due to the liquefaction of their body on which attention has not been focused in the past.

The liquefaction process for the body of levees involves the lower part of the levee body sinking and becoming loose if the levees are built on sandy earth lying over soft clay layers; layers carrying seepage water being liquefied due to seismic vibrations; and such damage as the sliding of the levee body as well as cracks on the top and its eventual collapse being caused.

In response to this damage, MLIT decided to review methods for checking levees' resistance to earthquakes, include the liquefaction of levees in the list to check their ability to resist earthquakes, and lower water levels inside levee bodies and take other measures, if necessary.

Damage to levees due to the liquefaction of their body



Source: MLIT

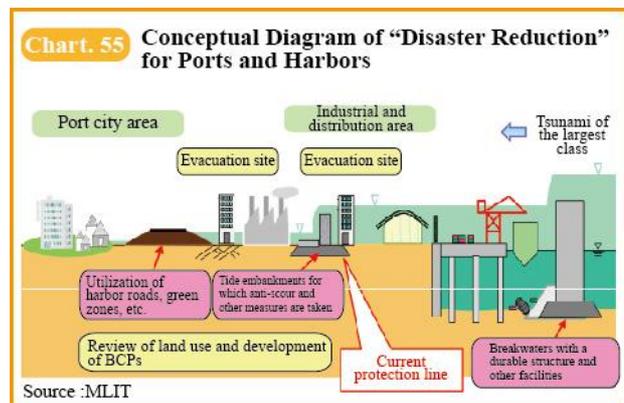
(3) Tsunami and earthquake measures for ports and harbors

After the Great East Japan Earthquake, tsunami damaged breakwaters, but it was confirmed that the breakwaters were effective mainly in lowering the level of tsunami and delaying tsunami in reaching the areas they were intended to protect from it. Therefore, for tidal waves higher than those which frequently occur, it is necessary to take evacuation and other measures in a comprehensive way while taking into account the disaster reduction effects of structures.

In addition, loading and unloading sites sank due to liquefaction, hindering cargo work, but earthquake-proof piers were used to transport emergency suppliers, and at the same time, ports and harbors in Hokkaido and on the Sea of Japan side played the role of

complementing cargo transport. Taking these results into consideration, the Ministry strives to minimize damage from earthquakes and tsunami and return distribution functions to normal early on by encouraging the port and harbor authorities to formulate business continuity plans (BCPs), drawing up plans to increase the ability of port facilities to resist earthquakes and tsunami, laying out action plans to be implemented after the occurrence of earthquakes and tsunami, and taking necessary measures based on these plans.

Since it is feared that huge earthquakes occurring along the Nankai Trough or directly below the greater Tokyo metropolitan area will cause damage to wide areas, the Ministry will urge the port and harbor authorities nationwide to establish wide-area backup systems to help each other. It will also work to build disaster-resistant distribution networks by taking earthquake and tsunami measures for pivotal distribution centers.



(4) Stronger tsunami measures for sewerage

Since sewerage had little experience in being damaged by tsunami in the past, full measures had not necessarily been taken in advance to cope with tsunami, and much of the sewerage, including mechanical and electrical equipment, was damaged, destroyed, or washed away by the recent earthquake. In the future, the Ministry will pay attention so that sewerage can be returned to normal quickly even if mechanical and electrical equipment is destroyed or washed away and that sewage can be drained even if the water level at treatment and pump stations falls due to land subsidence.

Chart. 56 Standard Ability of Sewerage to Resist Tsunami of the Largest Class

Facility type	Duct facilities	Pump stations	Treatment stations		
Classification of functions	Overall functions				
	Basic functions			Other functions	
	Preventing sewage from flowing backward	Pumping	Pumping Disinfection	Precipitation Dehydration	Functions other than those listed to the left
Ability to resist tsunami	"Must be maintained" without fail even if hit by disaster			Should be recovered swiftly though the temporary stoppage of functions is acceptable	Should be recovered early though the temporary stoppage of functions is acceptable
Unit facility	Sluiceway facilities	Pumping facilities	Pumping facilities Disinfection facilities	Precipitation facilities Dehydration facilities	
Example of response measures	<ul style="list-style-type: none"> - Major structures are installed at locations higher than expected flood levels. - Openings are installed at locations higher than expected flood levels. - Openings are covered by protective walls. - Electrical and mechanical equipment is installed at locations higher than expected flood levels. 			<ul style="list-style-type: none"> - Installation of tsunami-resistant walls and making openings watertight (watertight doors). - Installation of tsunami-resistant walls and making electrical and mechanical equipment watertight - Securing extra machines (electrical and mechanical equipment) 	- Other measures

Source :MLIT

(5) Starting to take tsunami measures for airports

Each airport had steadily taken measures to make it earthquake-resistant, but their efforts had not been sufficient in terms of response to possible tsunami. For this reason, based on the lessons learned from the recent earthquake, the airport authorities, which are likely to be hit by tsunami, will establish emergency evacuation systems on the assumption that their airports may be stricken by tsunami of the largest class. In order to protect the lives of passengers in the airport, related airport personnel, and evacuees from neighboring areas as well as those of passengers on airplanes running on the ground by giving appropriate instructions and information to the airplanes, some airports, including the Tokyo International Airport, have built such systems by establishing standards for decisions on whether to order evacuation, designating evacuation sites, and examining in concrete terms methods to handle evacuees, provide information, and take other measures as well as by establishing implementation systems, defining division of roles, securing methods to obtain and communicate information, and conducting drills. Other airports will also gradually establish such systems in the future. If hit by tsunami, the airport authorities will swiftly establish systems of cooperation with various related organizations engaged in recovery efforts so that their airports start to demonstrate their functions as a hub of emergency and life-saving activities and emergency supplies transport within three days of disaster occurrence, and will remove driftage flowing into the airport, install temporary power generation equipment, and take other necessary measures. They will also recover their fences to maintain security areas required for the operation of commercial flights early on.

Six airports---Sendai, Haneda, Chubu, Kansai, Kochi, and Miyazaki---will take such measures as drawing up work plans to enable early recovery as described above.

Column Sendai Airport Served as a Hub of Transport of Emergency Supplies

After the Great East Japan Earthquake, due to the tsunami that followed it, Sendai Airport saw over 2,000 damaged cars and some 370,000 m³ of debris drift on to its grounds, including runways, but thanks to the urgent recovery efforts of the Self-Defense Forces, American armed forces, administrative agencies, and related parties from the private sector, helicopters began to operate at the airport on the fourth day after the disaster, and transport aircraft from American armed forces, etc., did so on the fifth day. Thus the Sendai Airport served as a hub of transport of rescue suppliers.

Transport of emergency supplies at Sendai Airport



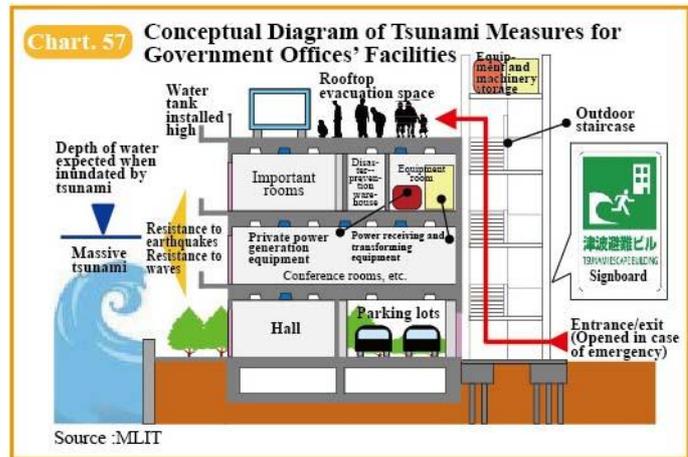
Source: MLIT

(6) Tsunami measures for railways

The Ministry is examining the status of evacuation and guidance of railway passengers at the time of tsunami occurrence after the earthquake and considering methods to obtain information on tsunami and other warnings issued if means of communications are disrupted, evacuate passengers quickly if trains stop in sections likely to be submerged by tsunami, and evacuate passengers at night. Thus, it will speed up evacuation and guidance at the time of tsunami occurrence and ensure the safety of railway passengers.

(7) Tsunami measures for government office facilities

Since their facilities are supposed to serve as centers of disaster and emergency response activities or temporary evacuation sites, contributing to the rescue of human life, government offices will take tsunami measures in a comprehensive and effective way in addition to the seismic retrofiting they have done in the past. Specifically, in order to prevent equipment and facilities from flood damage and avoid the loss of important documents, they will install important rooms and equipment at high locations, provide outdoor staircases, and build rooftop evacuation spaces.



(Response to long-period earthquake ground motions)

Long-period earthquake ground motions refer to seismic vibrations that involve earthquake waves with long frequencies and are characterized by a very long succession of slow quakes. They are estimated to greatly affect super high-rise and similar buildings. When the Great East Japan Earthquake occurred, large vibrations were observed at high-rise buildings in greater Tokyo, Osaka, and other large cities due to long-period earthquake ground motion. It is feared that if a huge earthquake occurs along the Nankai Trough as expected to do so in the near future, super high-rise and similar buildings in Tokyo, Nagoya, Osaka, and other large cities would experience large vibrations. For this reason, the Ministry is currently considering a review of methods to approve under the Building Standard Law measures taken by super high-rise and similar buildings exceeding 60 m in height to cope with long-period earthquake ground motions while watching the results of studies by the Cabinet Office and the Ministry of Education, Culture, Sports, Science and Technology of possible huge earthquakes along the Nankai Trough. It is also considering how information should be provided effectively to prompt initial actions immediately after earthquakes such as early identification of damage to humans and property caused by long-period earthquake ground motion, thus aiming to start providing information on long-period earthquake ground motion that has been observed.

(Improvements on tsunami warnings)

The Meteorological Agency issued its first tsunami warning three minutes after the occurrence of the March 11 earthquake, but it was pointed out that the Agency underestimated the height of the first waves of tsunami and that this, together with other factors, might have delayed the evacuation of residents, resulting in greater damage. Based on the lessons learned from this experience, the Agency asked academics and experts to examine how to issue appropriate tsunami warnings in order to improve them. It reorganized its policy to improve tsunami warnings so that they would help residents to evacuate more properly and decided to implement a new system of tsunami warnings as soon as possible.

Chart. 58 Standards for Classification of Tsunami Warnings by Wave Height

Classification of tsunami watches and warnings	Warning issuance standards and classification of expected tsunami heights	Expected tsunami height	
		Issuing warnings using numerical values	Issuing warnings using qualitative expressions
Massive tsunami warning	10 m or higher	Over 10 m	Massive
	5-10 m	10 m	
	3-5 m	5 m	
Tsunami warning	1-3 m	3 m	High
Tsunami watch	0.2-1.0 m	1 m	None*

* This is not indicated in the information provided.
Source: Meteorological Agency

Specifically, if, when issuing its first tsunami warning, the Agency determines that there is a possibility of underestimating the magnitude of the earthquake that occurred, it would apply the largest magnitude expected in the waters where the earthquake occurred or issue a tsunami warning using qualitative expressions such as “huge” instead of numerical values indicating expected tsunami heights, thus informing residents that the event is an emergency different from ordinary earthquakes and prompting them to evacuate as soon as possible. The Agency has also decided to change the classification of expected tsunami heights from the current eight-grade system to a new five-grade one taking into consideration the relationships between the height of tsunami and the degree of damage, errors in tsunami forecasts, and the level of disaster-prevention measures that can be taken.

Furthermore, in order to issue more reliable tsunami warnings swiftly and without fail, the Agency has decided to install at 80 locations nationwide wide-band strong-motion seismographs capable of measuring even massive earthquakes. It has also decided to install and utilize undersea tsunami recorders at three locations off Tohoku’s Pacific coast.

(Creating disaster-resistant cities and transport centers)

The March 11 earthquake registered up to a weak 6 on the Japanese seismic scale even in the greater Tokyo metropolitan area, the first such occurrence since the Great Kanto Earthquake in 1923, and strong vibrations were observed in almost all of the area. Due to the effects of the earthquake, a phenomenon known as liquefaction occurred in wide areas, particularly along Tokyo Bay, and many areas saw lifelines such as electricity, gas, water supply and sewerage, and communications disrupted and public and civil engineering facilities destroyed. In addition, on the day of the earthquake, major railways in greater Tokyo suspended operation, and as a result, according to estimates by the Cabinet Office, some 5.15 million people were stranded in the area, particularly in districts around hubs of transport in large cities where various facilities concentrated. Supply chains and distribution systems were also disrupted.

In October 2011, based on the lessons learned from the earthquake, the government revised its basic urban reconstruction policy based on the Act on Special Measures concerning Urban Reconstruction (cabinet decision) in order to promote creation of disaster-resistant cities in preparation for large-scale disasters such as Tokai earthquakes and those which are expected to occur directly below the capital area.

Chart. 59 Overview of the Revised Basic Urban Reconstruction Policy

Basic policy	Large and provincial cities	Large cities
Minimization of human loss: Multiple defenses for large-scale disasters by infrastructure development and other measures	<ul style="list-style-type: none"> - Development of coast preservation facilities, tsunami evacuation buildings, evacuations routes, etc., seismic retrofitting for houses and other structures, and improvement of measures to prevent liquefaction - Improvement of hazard maps, creation of a keener awareness of disaster prevention through education in disaster prevention, and strengthening of local communities 	<ul style="list-style-type: none"> - Development of disaster response plans for districts where high-rise and similar structures concentrate - Improvement of measures taken for super high-rise and similar buildings to cope with long-period earthquake ground motions
Prevention of urban functions from stopping or declining: Promotion of city planning so that urban functions continue independently even at the time of disaster	<ul style="list-style-type: none"> - Securing distributed, independent energy sources, etc., at disaster-prevention centers, administrative agencies, and other locations - Development of regional disaster response plans and business continuity plans - Securing alternative and diverse lifelines 	<ul style="list-style-type: none"> - Promotion of development of centers, etc., with disaster-resistant business and other functions, which have distributed, independent energy sources and stocks of supplies - Improvement of measures to handle stranded people
Cooperation between cities: Establishment of stronger systems of cooperation between cities as they prepare for disasters	<ul style="list-style-type: none"> - Conclusion of disaster agreements - Sharing of knowledge of disaster response - Sharing of various urban functions among cities located in different areas 	<ul style="list-style-type: none"> - Promotion of reasonable sharing of functions among large cities taking into consideration risks of large-scale disasters

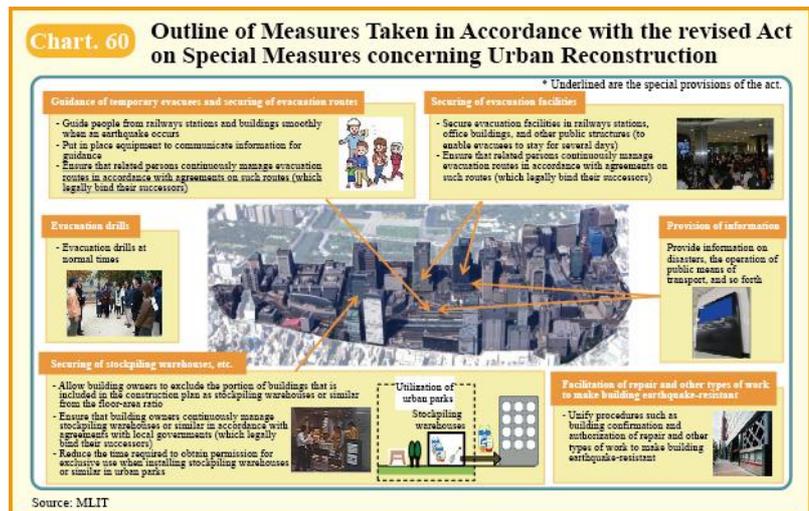
Source: This table has been created using materials from the Cabinet Secretariat.

Later, in March 2012, the Act to Revise Part of the Act on Special Measures concerning Urban Reconstruction was established to ensure the safety of cities through public-private partnership by promoting infrastructure development and other measures. The Act allows a council consisting of members from the national and local governments, city developers, railway operators, owners of large buildings, and other stakeholders to develop urban reconstruction and safety plans for urban reconstruction emergency development areas and requires implementers of projects included in the plans to carry them out according to the plans with the budgetary support of the national government.

The Act stipulates that these plans shall promoting infrastructure development and other measures (establishment and management of evacuation routes and facilities as well as urban reconstruction and safety facilities such as stock warehouses, guidance to evacuation facilities, provision of information on disasters and the operation of means of public transport, distribution of stock supplies, evacuation drills, and so forth). In order to ensure that urban reconstruction and safety facilities included in the plans are established and managed continuously, the Act also prescribes a new agreement system, which requires new owners of such facilities

to continue observing the existing agreement even if the facilities change their owners.

After the earthquake occurred, many people rushed to hubs of transport such as the terminal stations of railways. For this reason, the Ministry identified problems by establishing a council to examine how to resume railway operation in greater Tokyo after the occurrence of a massive earthquake, and the council considered how to evacuate and guide passengers swiftly, provide information to ensure smooth resumption of operation, and receive stranded people at urban facilities, as well as measures to be taken to secure sufficient means of transport for people coming home.



MLIT also participated in a council co-hosted by the Cabinet Office and the Tokyo metropolitan government to consider measures to handle stranded people and cope with other problems when an earthquake occurs directly below the capital area. The council discussed such issues as making the policy of preventing all workers from coming home at the same time known to employers, protecting users at stations and other facilities, guiding and transporting people staying in front of stations, and providing appropriate information to stranded people, and put together an interim report on these issues in March 2012. In the summer and autumn of 2012, it will develop guidelines for protecting users at large crowd-attracting facilities, stations, and so forth and organize policy to solve issues based on simulations of transport of stranded people.

Furthermore, railway operators are doing seismic retrofitting and taking other measures for their 270 or so major stations, which are used by 10,000 people or more a day and have such functions as serving as a junction for two or more lines, because they are important as places to ensure the safety of passengers and temporary evacuation sites for stranded people.

Column

Coping with People Stranded in the Capital Area, a Problem That Was Highlighted after the Great East Japan Earthquake

According to the Cabinet Office, some 5.15 million people were stranded in the capital area after the March 11 earthquake. The Cabinet Office assumes that if a massive earthquake occurs directly below the capital area, 6.5 million people would be stranded in urban districts in Tokyo and the other three neighboring prefectures. The Tokyo metropolitan government's assumptions of damage indicate that in its 23 wards, some 2.39 million residents would be forced to stay at evacuation sites due to loss of their own houses. In eleven of these wards such as Adachi, Ota, and Sumida, however, the currently available evacuation sites would not be able to accommodate about 276,000 residents even if all public facilities such as elementary and junior high schools are used. If stranded people are included, it would be necessary to find new evacuation sites capable of accommodating about 1.3 million people or more.

In March 2012, the Tokyo metropolitan government established an ordinance requiring businesses to save for emergency water, food, and blankets that will allow their employees to live for three days. It estimates that around 40% of businesses have already stored three days' supplies or more. It has also entered into agreements with shipping companies on the transport of emergency supplies at the time of disaster, but its policy is to conclude new agreements with these companies to transport stranded people as well. In accordance with this policy, the government will determine marine routes that allow stranded people to go home by ferry or high-speed jet boat via Kisarazu Port in Chiba Prefecture and Yokohama Port in Kanagawa Prefecture.

(Measures to cope with liquefaction)

A total of 26,914 houses suffered damage from the liquefaction of the ground due to the Great East Japan Earthquake (as of September 27, 2011). In order to prevent disaster due to liquefaction again, it is necessary to not only restore the damaged houses to the original state but also improve the soil on which they stand, and to that end, it is efficient and effective to take integrated measures involving neighboring residential areas.

Expenses for measures taken for public facilities to cope with liquefaction are borne by governments, but in principle, owners of private houses must pay expenses for measures they take for the houses to cope with liquefaction. The Ministry, however, recently created projects to promote liquefaction measures integrated with public facilities, such as roads and sewerage, as well as neighboring residential and other areas.

Specifically, MLIT has decided to (1) support surveys required for liquefaction measures, business planning, and coordination, (2) provide support by improving land registers in areas where there is substantial confusion about site boundaries, fiducial points, etc., and implementing land rezoning projects, which include liquefaction measures, and (3), even if land rezoning projects are not used, support projects that are considered to take integrated liquefaction measures for public facilities and private houses on a certain scale or larger (over 3,000 m² with ten houses or more).

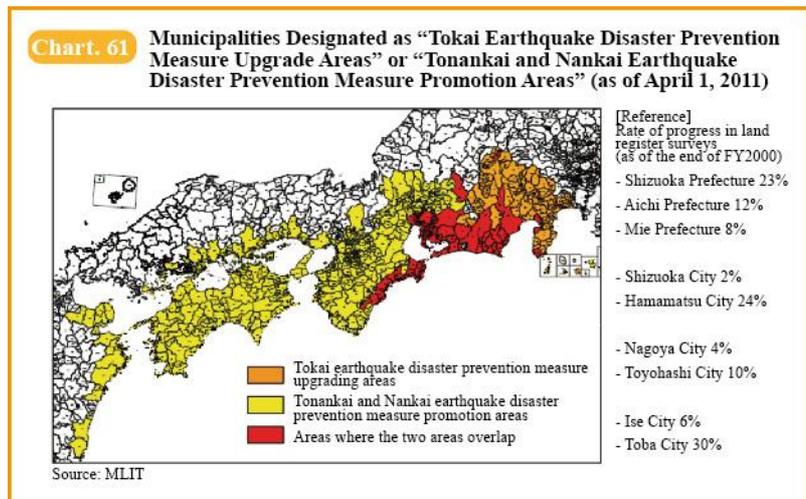
In addition, Sendai-Shiogama, Ibaraki, and other ports suffered damage from liquefaction. If a large earthquake occurs in the future, liquefaction would be likely to cause damage to these ports as the March 11 earthquake did, and it is feared that it will paralyze local economies due to the stagnation of corporate production, distribution, and other operations.

For this reason, it is necessary to examine the ability of port and harbor facilities, such as piers, to resist earthquakes from a technological point of view taking into consideration seismic vibrations that last long, and the Ministry is considering reviewing technological standards for port and harbor facilities, improving methods to implement liquefaction measures for ports and harbors, and taking other necessary steps.

(Active improvement of land registers)

In order to ensure swift recovery and reconstruction from disasters, it is important to define the boundaries of land in advance. Areas stricken by the March 11 earthquake have a high rate of progress in land register surveys, and in particular, land register surveys have already been conducted in about 90% of the areas submerged by tsunami. Therefore, the results of such surveys are being restored quickly and easily, contributing to recovery efforts.

Many of the areas where a Tokai, Tonankai, or Nankai earthquake is expected to occur have a low rate of progress in land register surveys.



Therefore, based on the lessons learned from the March 11 earthquake, these areas should actively promote improvement of land registers in conjunction with disaster-prevention projects, such as development of roads, which are indispensable to the provision of medical services and the transport of emergency supplies at the time of disaster.

(More effective response to large-scale disasters at MLIT)

Taking into consideration its response to damage caused by the Great East Japan Earthquake, the Ministry revised its disaster-prevention operation plans in August 2011 and upgraded its crisis management systems such as strengthened tsunami measures. Furthermore, in order to establish wide-area support systems such as nationwide utilization of its personnel and supplies, MLIT is working to draw up specific action plans such as TEC-FORCE, conduct wide-area disaster-prevention drills in cooperation with related organizations, and further bolster its systems to respond to large-scale disasters.

The Ministry has also revised the “Flood Defense Flood Control Act” and stipulated specified emergency flood defense operations to allow MLIT to engage itself in flood defense activities such as elimination of floods if devastating disasters occur.

Furthermore, in order to respond to disasters swiftly and appropriately and minimize damage they cause, the Japan Coast Guard is striving to upgrade its disaster-prevention systems, and efforts include deploying patrol boats capable of responding to disasters more effectively, better life-saving and disaster-prevention equipment and materials, and more earthquake-resistant navigational aids and other facilities with independent power sources, and bolstering its survey and observation systems so that they contribute to measures to cope with massive earthquakes and tsunami.

(Reconstruction of local construction industries as a supporter of disaster response)

Local construction industries play an indispensable role in maintaining local communities, such as disaster response, snow removal, and infrastructure operation and maintenance. Immediately after the March 11 earthquake, construction companies in stricken areas rushed to the sites of disaster in accordance with disaster and other agreements they had entered into with the national and local governments and played a major role mainly in collecting information on damage caused to their community, procuring heavy machinery, other equipment, and materials, and performing emergency recovery work. They also contributed to maintaining employment for victims of the earthquakes.

However, businesses are losing their strength and becoming increasingly small particularly in provincial areas, and therefore, a decreasing number of businesses are capable of undertaking projects to maintain local communities, such as disaster response, snow removal, and infrastructure operation and maintenance, which are less profitable and require them to secure a certain number of workers and machinery. If this situation continues as is, some communities may have difficulty even in keeping the operation and maintenance of their infrastructures at a minimum level. For this and other reasons, there are cases in which, or there is concern that, the maintenance of local communities is hindered. Most of the local governments are

also concerned about the future of projects to maintain local communities, and in particular, many of them complain that there are already problems with snow removal work in particular. For this reason, the Cabinet revised part of the Guidelines for Measures to Make fair Bidding and Contracts for Public Works at its meeting in August 2011 to introduce community maintenance type contracts as a new method to conclude contracts in order to maintain supporters of community maintenance projects. In November of the same year, it established working rules for the effective use of joint ventures of constructors for community maintenance. MLIT and local governments have started to figure out good ways to maintain supporters of community maintenance projects. One example is to conclude contracts that cover several community maintenance projects or multiple-year ones with joint ventures of companies for some of the projects they implement, if necessary.

Moreover, in March 2012, the Ministry introduced the Reconstruction JV System in Iwate, Miyagi, and Fukushima Prefectures with the aim of maintaining engineers and skilled workers, whose supply is insufficient in stricken areas, in a flexible way from a broader perspective while allowing construction companies in these areas to jointly receive orders for construction with those in other areas and thus contributing to the maintenance of employment.

Chart. 62 Reconstruction JV System

- The joint venture refers to an organization formed voluntarily by several construction companies to win an order for a construction project and implement it.

(Existing JV methods)

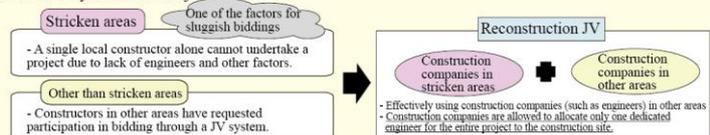
Special JV : A joint venture organized for each large, highly technical construction project

Ordinary JV : A joint venture organized by small and medium-sized construction companies to maintain continuous relationships of collaboration

Community maintenance type JV : A joint venture organized to ensure stable implementation of projects indispensable to the maintenance of a local community

- Reconstruction JV System

The Reconstruction JV System has been created to encourage construction companies, mainly those in stricken areas, to form joint ventures voluntarily. This system allows reconstruction JVs, which include those from other areas than stricken ones, to participate in the competitive bidding which previously allowed only local ones to join.



The Reconstruction JV System provides a necessary project implementation system from a broader perspective while maintaining local employment so that construction work is performed swiftly and efficiently.

Source: MLIT

2 Renewed recognition of the importance of redundancy and networks

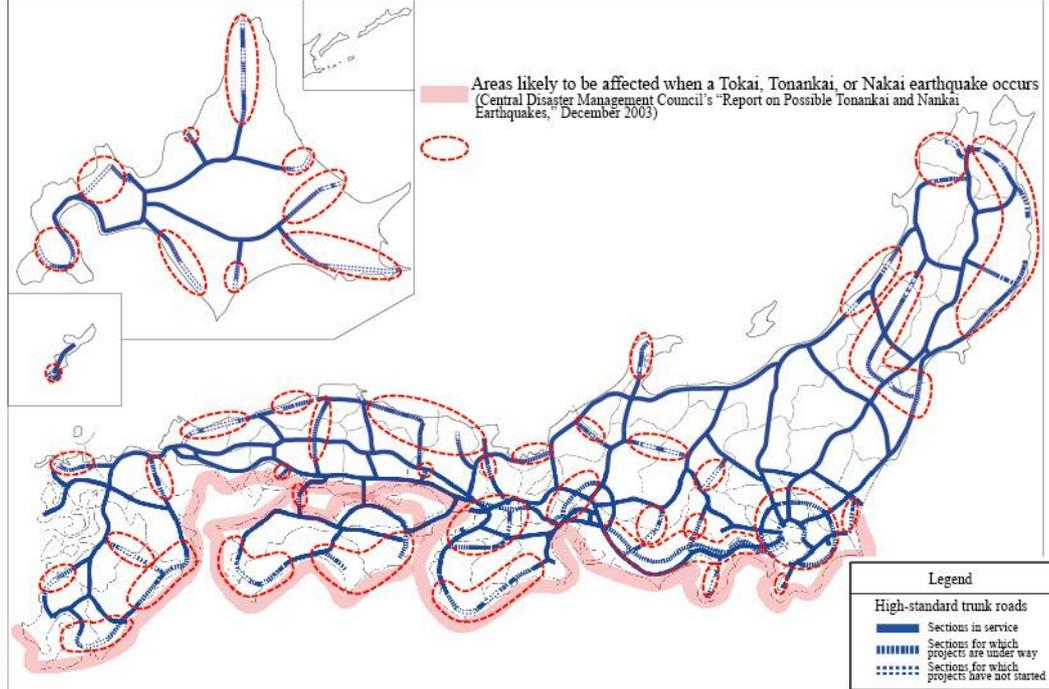
(Elimination of missing links in expressway networks and improvement of project evaluations)

The Great East Japan Earthquake hit National Road 45 and made it impassable, but the road along the Sanriku Coast, which was partially in service, and other expressways were practically not damaged because they were elevated taking into consideration the tsunami that had stricken the coast before, and even after the earthquake, they played a major role as bypasses for the national road and emergency transport routes. As a result of the seismic retrofitting performed taking the previous earthquakes into account, meanwhile, main trunk roads did not sustain fatal damage and returned to normal early on. Furthermore, as alternatives to expressways on the Pacific side, whose use was limited after the earthquake, the network of trunk roads on the Sea of Japan side served as supplies transport routes. As these examples show, the Ministry recognized anew the important roles expressway networks play when a disaster occurs.

In terms of disaster prevention, however, national roads have problems as exemplified by the fact that the only national road in a community is still liable to be hit by tsunami, easily making the community isolated, and some sectors of the national roads actually remain vulnerable to disaster. MLIT has recognized anew that a road network functions only if all its roads are interconnected and is working to strengthen the road networks mainly by increasing the ability of vulnerable communities to cope with disasters, viewing early establishment of road network functions to protect national land as a top priority task, and striving to eliminate missing links in the expressway network.

Chart. 63 Missing Links in the Expressway Network

■ In the areas likely to be affected when a Tokai, Tonankai, or Nakai earthquake occurs, there are many national roads feared to be inundated or missing links in the expressway network.



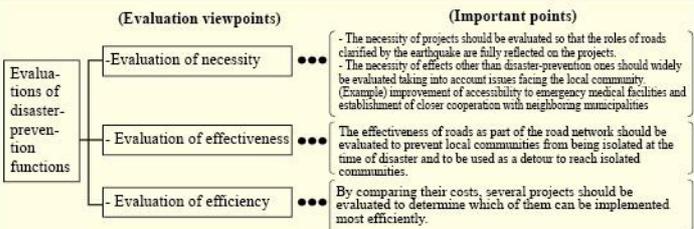
Source: MLIT

In addition to the traditional concept of road networks mainly to resolve traffic congestion (which pays attention to evaluations of economic efficiency such as traffic volumes and reduction in travel time), the Ministry adopted a method of evaluating wide-area disaster-prevention network and other effects from the viewpoint of road networks to prevent the isolation of local communities and other problems at the time of disaster when including new projects such as Sanriku Coast roads in the third supplementary budget for fiscal 2011. Through these examples of project evaluations applied, it intends to improve its evaluation methods so that they further reflect road development effects, including disaster-prevention issues and road network effects.

Chart. 64 Important Points in Evaluation Methods (Provisional) for Disaster-prevention Functions

Roles of roads clarified by the Great East Japan Earthquake (Roles of road networks that contribute to wide-area disaster prevention)

- Mainstay routes supporting rescue and relief activities, being used to transport emergency supplies, and underpinning recovery efforts
- Trunk roads helping residents to evacuate quickly when tsunami arrives and supporting the lives of people in stricken areas
- Roads serving as evacuation sites and being effective in stopping tsunami



Source: MLIT

(Maintaining diverse means of movement and transport)

When the March 11 earthquake disrupted the railway networks, intercity express buses played a major role as an alternative means of transport. In order to meet fuel shortages, fuel was transported to ports on the Sea of Japan side by tankers and other vessels, and it was also transported by special freight trains using the Sea of Japan routes. Furthermore, in the aviation sector, Hanamaki, Yamagata, and other airports were used as alternatives to Sendai Airport and served as bases for relief operations by air and alternative transport. Based on these lessons learned from the earthquake, it is necessary to consider maintaining means of transport and movement through cooperation among land, marine, and air transport such as establishing wide-area backup systems and ensuring appropriate redundancy to prevent the spread of damage, provide emergency support, and take recovery and reconstruction measures quickly and smoothly.

For this reason, the Ministry is currently considering maintaining alternative means of transport across the modes of transport such as using bus transport effectively according to the progress in the recovery of railway services because it is expected that railways services are suspended for a long time in large cities due to massive earthquakes and other disasters.

(Multi-faceted utilization of social infrastructures: urban parks and roads as evacuation sites and disaster-prevention centers)

While the recent tsunami damage indicates that most of the trees in coastal areas were brought down and washed away, causing damage, other trees were effective to a certain extent in reducing tsunami damage as exemplified by the fact that trees alleviated the damage caused to houses in the area behind them and that they caught vehicles and other floating objects.

Taking this into consideration, MLIT put together Technical Guidelines for Development of Parks and Green Zones Related to Reconstruction from the Great East Japan Earthquake so that they could be used effectively when local governments considered reconstruction plans. These guidelines state that parks and green zones fulfill four functions: as one of multiple-defense functions, as evacuation routes and sites, as a

means of recovery and reconstruction, and as an aid to disaster-prevention education. They also illustrate guiding principles for planning and designing parks and green zones so that they produce disaster-reduction effects to the maximum extent.

Cases have also been confirmed in which roads served as evacuation sites for local residents (Sanriku Expressway) and in which they were effective in preventing floods from spreading (Sendai Tobu Road). Road stations, service and parking areas, and facilities integrated with interchanges were also used effectively as disaster-prevention bases. Taking this into consideration, the Ministry implemented disaster-prevention and earthquake-resistant measures for roads as part of its third supplementary budget for fiscal 2011. These measures included adding disaster-prevention functions to transport facilities (using road stations and service and parking areas as disaster-prevention bases, developing emergency connection roads, and installing evacuation staircases) while continuing to take disaster-prevention measures for roads (such as prevention of slope failures, and reinforcement through embankment) and retrofit bridges.

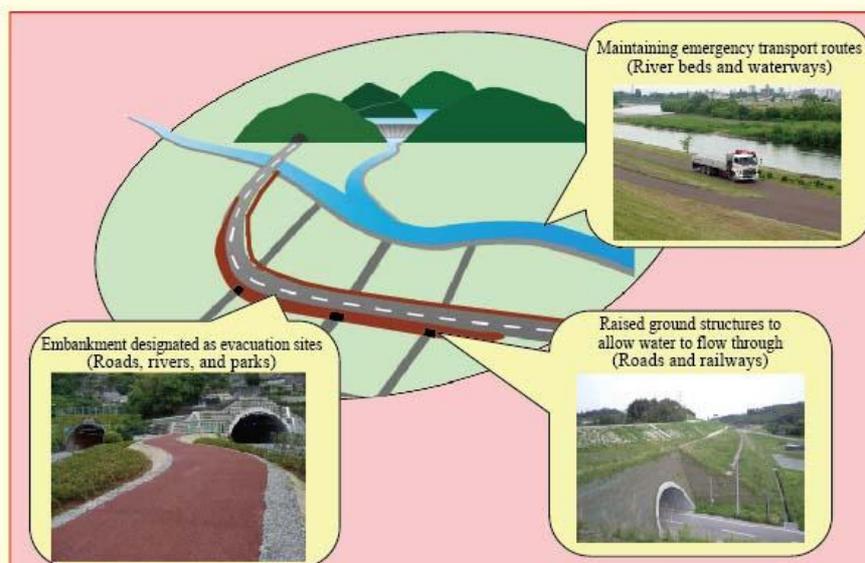
The move to use the slope surface of embankment for expressways in coastal areas as emergency evacuation sites if tsunami arrives is spreading nationwide. In August 2011, outside the stricken areas, Tokushima City of Tokushima Prefecture entered into an agreement with West Nippon Expressway Co., Ltd. to install tsunami emergency evacuation sites on the portion of the Shikoku Expressway that runs in the city. In November of the same year, Shizuoka and Yaizu Cities, both in Shizuoka Prefecture, concluded an agreement with Central Nippon Expressway Co., Ltd. to allow their residents to evacuate to the slope surface of embankment for the Tomei Expressway if tsunami strikes the cities.

Chart. 65 Trees Prevented Vehicles and Other Objects from Being Washed Away



Source: MLIT

Chart. 66 Multi-faceted Utilization of Social Infrastructures



Source: MLIT

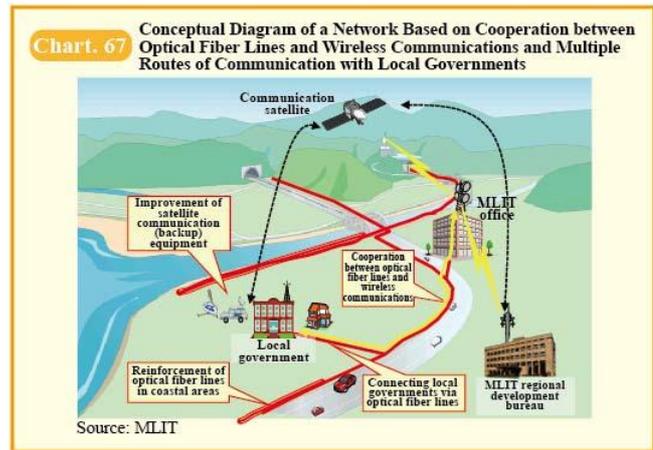
(Using rivers with the occurrence of disaster in mind)

If the Great East Japan Earthquake is taken into consideration, it is necessary to use ports at normal times so that they can be used safely and reliably in case of emergency. Therefore, in September 2011, the Ministry established a council to promote utilization of rivers in Tokyo's lowlands. The council consisted of members from local governments such as the Tokyo metropolitan government as well as Tokyo's Sumida, Koto, Katsushika, and Edogawa Cities, organizations related to tourism, education, and water surface utilization, and academics and experts. In March 2012, it put together basic policy for promotion of use of ports on Arakawa and other rivers.

In February 2012, the Ministry organized a council to implement plans for utilizing the lower course of Arakawa River with the aim of contributing to swift disaster-prevention measures by effectively and smoothly using the bed of the river and its disaster-prevention facilities such as emergency river bed roads and emergency ports and developed a new operation manual. The council comprised members from Tokyo, Saitama Prefecture, and nine municipalities, the police, fire stations, and the Self-Defense Forces.

(Establishment of multiplex information and communications networks)

The recent earthquake interrupted information and communications networks with local governments in stricken areas, hindering relief activities. Taking these circumstances into account, the Ministry will utilize optical fiber lines, which connect to local governments to exchange video and data for road and river management, to lay new telephone lines that can be connected to micro carrier telephony, enabling local governments to exchange information and communicate with MLIT and other government agencies even if information exchange and communication through public telephone lines or similar become impossible.



(Establishment of bases and systems to distribute support supplies at the time of disaster)

Since the Great East Japan Earthquake was an unprecedented large-scale disaster, not only local governments but also the national government procured and transported support supplies. In this process, the latter recognized the importance of support supplies being transported by many distributors.

Based on these lessons, the Ministry established a council to establish disaster-resistant distribution systems in each of the four regions of the country: Kanto, Tokai, Kinki, and Chugoku, Shikoku, and Kyushu. In order to ensure smooth distribution of support supplies, each council, which consists of members mainly from the national and local governments, experts, distributors, and industry organizations, put together plans to analyze matters to be addressed at the time of disaster and division of roles; coordinate local governments, distributors, and industry organizations to enter into agreements to work together at the time of disaster; select private distribution centers to concentrate, manage, and deliver support supplies; and conduct drills at normal times. It also listed 395 private distribution centers nationwide, which will be utilized as supply centers at the time of disaster.

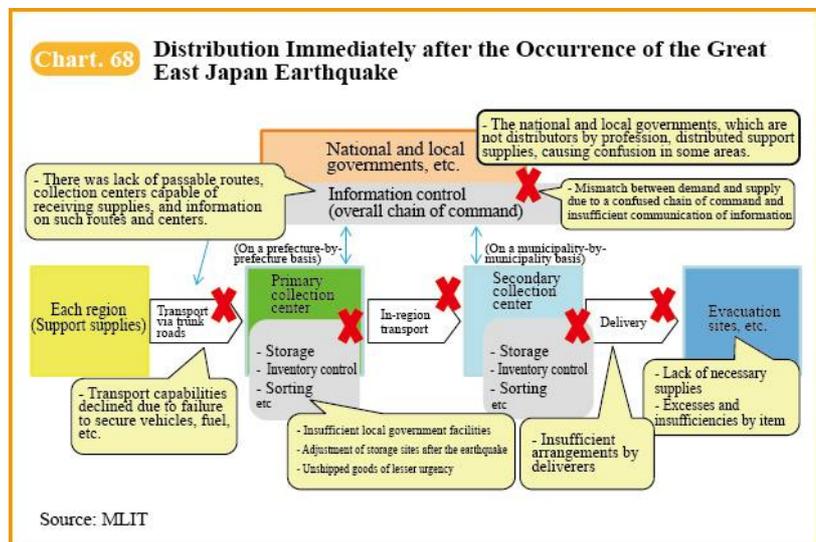


Chart. 69 Areas Covered by Each Council

Areas affected by an earthquake that is expected to occur directly below greater Tokyo or similar	Kanto region council	Ibaraki, Tochigi, Gunma, Saitama, Chiba, Tokyo, Kanagawa, and Yamanashi
Areas affected by a Tokai earthquake or similar	Tokai region council	Yamanashi, Nagano, Shizuoka, Aichi, Gifu, and Mie
Areas affected by a Tonankai or Nankai earthquake or similar	Kinki region council	Shiga, Kyoto, Osaka, Hyogo, Nara, and Wakayama
Areas affected by a Nankai earthquake	Chugoku, Shikoku, and Kyushu region council	Okayama, Hiroshima, Yamaguchi, Tokushima, Kagawa, Ehime, Kochi, Oita, and Miyazaki

Source: MLIT

(Maintaining emergency transport roads)

As the urgency of an earthquake occurring directly below greater Tokyo is pointed out, the Tokyo metropolitan government, in an effort to prevent collapsed buildings from blocking emergency transport roads, established an ordinance in March 2011 to promote seismic retrofitting of buildings along such roads. Starting April 2012, this ordinance requires owners of some 5,000 office buildings and condominiums along specified emergency transport roads (1,000 km of roads designated as such) to conduct earthquake diagnoses. The government reckons that earthquake diagnoses of some 3,000 structures will be completed by fiscal 2013 and that they will undergo repair if required.

(Backups for the central functions in the Tokyo area)

The Great East Japan Earthquake caused tremendous damage to a wide range of areas, and its economic effects extended widely to cover not only Japan but also the rest of the world. Therefore, how national land should be developed to minimize damage caused by a huge disaster like the March 11 earthquake became an important issue to be addressed in formulating national land policy. In particular, it is clear that if a massive disaster hits the Tokyo area where the nation's central functions are concentrated, it would have incalculable, serious effects on not only the Tokyo area but also the entire nation, and that furthermore, it would even widely affect the international community.

For this reason, it is pointed out in various circles that the central functions in the Tokyo area should not stop no matter what situation may occur and that backup systems should be established so that minimum necessary functions start work in other areas even if the central ones should stop.

In this backdrop, the Ministry established a panel of experts to consider establishing basic backup systems for the Tokyo area's central functions, and in April 2012, the panel analyzed basic issues such as operations to be backed up, resources required for the execution of operations to be backed up (such as how chains of command, personnel, facilities and equipment, information, and resources should be prepared (stand-by at normal times)), requirements for backup sites, etc., and decisions on and procedures for shifting to backup systems and policies and other guidelines for addressing the issues. The probability of an earthquake of magnitude 7 class occurring directly below greater Tokyo during the next 30 years is estimated at 70%, and in view of its urgency, the national government is urged to take swift actions to establish backup systems for the Tokyo area's central functions.

3 New recognition of energy and environmental restrictions

The Great East Japan Earthquake and ensuing tsunami caused an accident at Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power station. Later, nuclear power stations nationwide suspended operation one after another due to regular inspections and other factors, and for this and other reasons, the relationship between power supply and demand became tight on a nationwide scale. Initiatives for electricity conservation were carried out in many areas, including those served by Tokyo and Tohoku Electric Power Companies.

Meanwhile, global warming has serious effects on the global environment, and the United Nations Framework Convention on Climate Change makes it its ultimate objective to "stabilize greenhouse gas concentrations at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system," and attaining this objective is becoming a task shared by all mankind. Japan has worked to reduce greenhouse gas emissions by taking a stance of addressing this issue on its own initiative, and through discussions about how new energy supply and demand should be, an issue raised after the occurrence of the March 11 earthquake, it is important to push forward with advanced initiatives for energy conservation and use of renewable energy in order to realize a low-carbon society.

In order to achieve energy conservation, it is necessary to curb power consumption during peak hours in addition to making an all-out efforts for energy saving. It is also necessary to pay attention to renewable energy that has not been fully tapped in the past. Some of the hitherto unused and unprofitable energy might become profitable if electricity charges are expected to rise in the future. Not only businesses but also individuals are urged to make efforts to utilize renewable energy.

(Promotion of future environmental cities)

Before the earthquake, as part of its New Growth Strategy (adopted at a Cabinet meeting in June 2010), the government had worked out a plan to create future environmental cities, and under this plan, it had intended to generate the world's highest class of success examples in the development of technology, systems, and services and in city planning for the future and disseminate them throughout the country and to the rest of the world, but it also included this plan in the Strategy for Japan's Reconstruction, which was adopted after the earthquake, at a Cabinet meeting in August 2011.

In December 2011, six municipalities in the stricken areas (Ofunato City, Rikuzentakata City, and Sumita Town in Iwate Prefecture; Kamaishi City, Iwate Prefecture; Iwanuma City, Miyagi Prefecture; Higashimatsushima City, Miyagi

Prefecture; Minamisoma City, Fukushima Prefecture; and Shinchi Town, Fukushima Prefecture) were chosen as model future environmental cities, and they are expected to build exemplary future environmental cities and spread them throughout the country. In view of the ongoing drastic review of city planning triggered by the earthquake, MLIT also aims to establish disaster-resistant land use and transport systems with disaster-prevention and disaster-reduction functions added to them---its top priority issue---and work to help realize intensive urban structures and low-carbon cities with less environmental impacts.

(Initiatives for a low-carbon society)

In order to advance initiatives for a low-carbon society, the Ministry will display its comprehensive strength to give shape earlier than anyone else to what should be used as environmental performance standards for houses and other structures, means of transport, and public facilities, which constitute local communities and national life. Furthermore, by combining these into a package of towns, houses, transport facilities, and other factors, it will promote energy creation, storage, and conservation for the entire city. Specifically, individual measures as described below will be implemented.

(1) Initiatives for housing and city planning

(a) Promotion of zero-energy housing, etc.

Only 40% of all newly built houses meet the current energy conservation standards. In order to further accelerate initiatives to reduce CO₂ emissions from houses, such as introduction of pioneering energy conservation technology that contributes to improvement of heat-insulating performance, etc., the Ministry will provide priority support to zero-energy houses and similar structures.

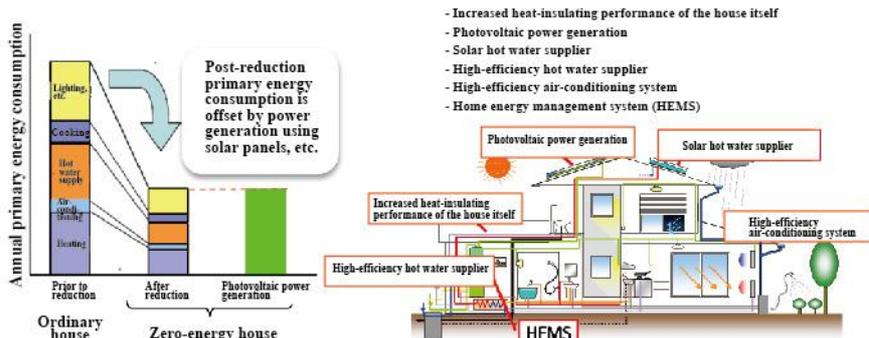
In order to spread and promote zero-energy houses in stricken areas, meanwhile, the Ministry is inviting projects from private enterprises and other organizations and providing support to the chosen projects.

In addition, the Japan Housing Finance Agency has expanded the range of reduction in long-term fixed interest rates for its housing loan "Flat 35S" for the first five years from 0.3% to 1.0% for stricken areas and from 0.3% to 0.7% for other areas if applicants purchase houses with excellent energy-saving performance.



Chart. 71 Conceptual Diagram of a Zero-energy House

The zero-energy house refers to one that reduces net annual primary energy consumption to zero or nearly zero mainly by improving the energy conservation performance of its structure and equipment and using renewable energy effectively.



(b) Resumption of the house eco-point system, etc.

In the third supplementary budget for fiscal 2011, the housing eco-point system was resumed as “Reconstruction Support Housing Eco-points” in order to support reconstruction from the March 11 earthquake while revitalizing the housing market and promoting energy conservation for houses.

Under the new system, as in the past, points are granted to newly built wooden eco-houses, that (1) meet the top-runner standards under the Energy Conservation Law or (2) meet the fiscal 1999 energy conservation standards, and in stricken areas^{Note}, 300,000 points, twice as many as in other areas, are granted for such houses to support reconstruction efforts.

Under the new eco-remodeling system, as in the past, points are granted to windows and the structure repaired to increase their heat-insulating performance, repair work performed in conjunction with these types of remodeling to make the house barrier-free, and eco-friendly house equipment installed. Points are also granted if applicants take out a remodeling defect insurance policy at the time of remodeling. Up to 300,000 points are issued for one house, but if repair work is performed for seismic retrofitting, an additional 150,000 points are issued for a total of 450,000 points.

This system is also designed so that it contributes to support reconstruction by encouraging applicants to exchange over half of the points granted for products produced in stricken areas or donations to such areas.

Chart. 72 Resumption of the Housing Eco-point System

Details of the system

■ Eligibility ※ Acceptance of applications began on January 25, 2012

Newly built eco-houses
 If the construction begins between October 21, 2011 (*) and October 31, 2012
 <The house must meet either>
 ① The top-runner standards under the Energy Conservation Law, or
 ② The fiscal 1999 energy conservation standards.
 (Additional points are granted if systems using solar energy are installed)

Eco-remodeling
 If the remodeling begins between November 21, 2011 and October 31, 2012
 <Eligible remodeling work includes>
 Repair of windows, external walls, ceiling, roofs, or flooring

<Example of repair work for higher heat-insulating performance>



Replacement of existing windows with those with double-layer sheets of glass

Repair of the ceiling to make it more heat-insulating

Additional points are granted if the work described below is performed in conjunction with remodeling.

- Repair to make the house barrier-free
- Installation of energy-saving house equipment
- Seismic retrofitting
- Taking out a reform defect insurance policy

(*) Day when the draft third supplementary budget was adopted at a Cabinet meeting

■ Number of points granted

Newly built eco-house
 In order to help revitalize the economies of stricken areas, twice as many points as for other areas are granted for such areas.

Stricken areas : 300,000 points per house
 Other areas : 150,000 points per house
 ※ Additional 20,000 points are granted if systems using solar energy are installed.

Eco-remodeling

Repair for energy conservation 2,000 to 100,000 points according to the nature of repair work performed	} Up to 300,000 points per house
Repair to make the house barrier-free (up to 50,000 points) 5,000 to 25,000 points according to the nature of repair work performed	
Installation of energy-saving house equipment (systems using solar energy, water-saving toilets, and highly heat-insulating bathrooms) 20,000 points for all cases	
Taking out a reform defect insurance policy 10,000 points for all cases	} Separately added
Seismic retrofitting 150,000 points	

■ Exchange for products

- ◆ Exchanging over half of the points granted for products supporting stricken areas such as specialties from such areas or donations to them
- ◆ Exchanging the remaining points for environmentally friendly products (eco-consumer electronics, cash cards that can be used for public transport, products from environmentally conscious businesses, etc.), appropriate them to additional construction work, or using them for environmental donations

Source: MLIT

Note : These areas refer to “specified stricken areas” as defined in the Law concerning Special Financial Support and Subsidies to Cope with the Great East Japan Earthquake.

Moreover, as part of the revision of the tax systems in fiscal 2012, the Ministry decided to take special tax measures. One is to raise the upper limit to the year-end balance of housing loans eligible for housing loan deductions for houses that are certified because, with the enactment of the Law concerning the Promotion of a Shift to Low-carbon Cities, low-carbon measures such as excellent energy-saving performance are taken.

(c) Creation of an environment to make it mandatory for houses and other structures to conform to energy conservation standards

The Ministry, together with related government offices, is considering making it mandatory in phases for all houses and other structures to meet energy conservation standards by 2020. On the other hand, as part of its efforts to create an environment to make such conformity mandatory, it plans to establish energy conservation performance evaluation and examination systems and develop personnel required for the operation of such systems, help small and medium-sized construction firms to acquire technology to install energy-saving equipment, and take other necessary measures.

(d) Wide-area use of energy

In order to promote effective use of sunlight, waste heat from plants, and other sorts of energy, as part of the urban district development, the Ministry will help local communities to draw up plans for establishing systems to utilize these kinds of energy widely for entire areas, urban districts, or other units of administration, coordinate project implementation, conduct tests and experiments, and build necessary facilities.

(2) Initiatives for the transport sector

(a) Accelerated spread and promotion of electric vehicles, etc.

In order to spread electric vehicles that has particularly excellent environmental performance among zero-emission motor vehicles (which do not emit CO₂, NO_x, particulate substances, etc. while running), the Ministry is providing priority support to advanced interregional or inter-company initiatives, which will prompt other regions or companies to introduce electric vehicles intensively.

In stricken areas, the Ministry is supporting motor-vehicle transport companies, which plan to introduce electric buses, taxis, and trucks in line with low-carbon city planning.

While MLIT takes special measures to reduce automobile weight and automobile acquisition taxes for cars with excellent environmental performance (eco-car tax reductions) and lower motor vehicle tax rates, it takes special measures (greening of motor vehicle taxes) to impose higher tax rates for motor vehicles that have seen a certain number of years pass since they were registered as new ones.

Moreover, in October 2011, MLIT decided to strive to further improve the fuel efficiency of motor vehicles by finalizing new fuel efficiency standards with fiscal 2020 as their target year.

(b) Initiatives for low carbon and energy conservation in the railway sector

The Ministry will also push forward with low-carbon and energy conservation measures in the railway sector. Efforts include utilizing regenerative electric power^{Note} by using storage batteries installed on vehicles and in transformer stations and effectively using renewable energy for lighting and other equipment at stations and station buildings. It is also supporting technological development for energy-efficient railway vehicles, which are expected to bring electricity conservation effects.

(c) Initiatives for low carbon and energy conservation at ports and harbors

In order to reduce greenhouse gas emissions resulting from port and harbor operations, the Ministry will promote zero-emission port measures to advance initiatives such as making loading and unloading machinery used at ports and harbors more energy-saving, using renewable energy effectively, and absorbing CO₂ from a wider range of sources. Specific projects MLIT is working on with the Ministry of the Environment include spreading and promoting energy-saving loading and unloading machinery and large storage battery facilities and encouraging utilization of wind power generation facilities through public-private partnership.

(d) Introduction of regulations on CO₂ emissions in international maritime transport

In July 2011, led by the Japanese government (which presented proposals for regulatory systems, etc.), the International Maritime Organization (IMO) adopted an international treaty to regulate CO₂ emissions in international maritime transport (The treaty will come into effect in 2013). Following the adoption of the treaty, MLIT's policy is to require newly built ships to meet new standards for CO₂ emissions starting 2013, and the Ministry laid a bill to revise the Law concerning Marine Pollution, Etc., and the Prevention of Marine Accidents, a domestic law, before the 180th session of the Diet.

Note : Regenerative electric power refers to one that is generated by using the motor as a braking system when reducing the speed of the train and then as a generator.

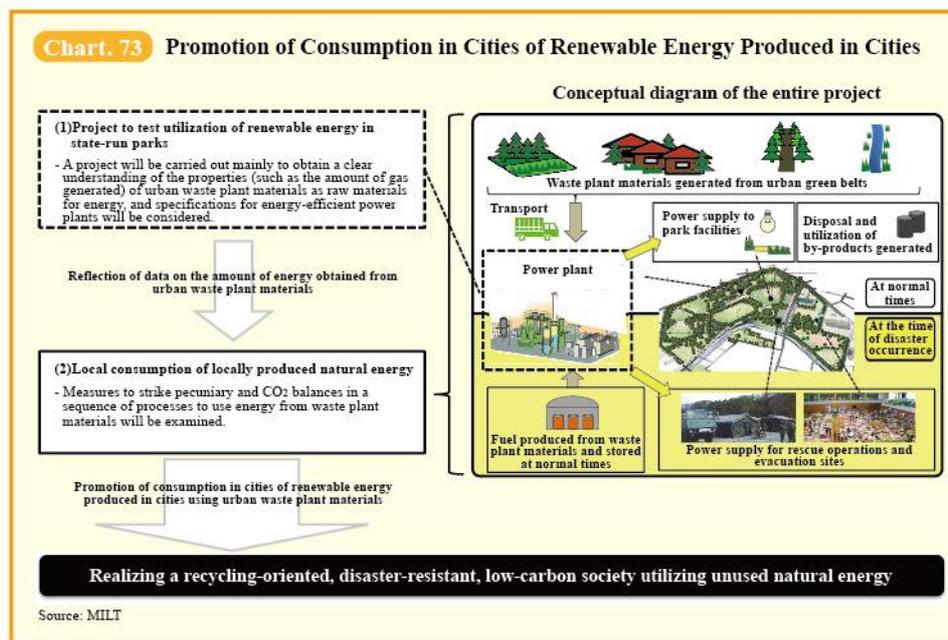
(3) Use of other kinds of renewable energy

(a) Use of renewable energy from sewerage

The national government will take leadership in installing practicable pilot plants to realize innovative technologies for treating sewage, utilizing sewage heat, and using sewage sludge as energy, verifying the feasibility of such technologies, putting together guidelines for using them, and introducing them for sewage treatment facilities nationwide while making the most of private enterprises' know-how and funds.

(b) Promoting utilization of renewable energy in cities by consuming local products locally

In FY2012, in order to realize disaster-resistant, low-carbon, and recycling-oriented cities by utilizing currently unused scrap wood (such as cut branches), which is generated from the parks, streets, and other parts of cities as “local production, local consumption” type renewable energy, the Ministry will conduct tests to develop energy-efficient power plants taking into consideration the characteristics of scrap wood collected from cities, draw up operation plans to use such plants as emergency power sources at the time of disaster, examine ways of striking a balance in terms of pecuniary accounts and CO₂ emissions in a series of processes such as collection and transport of scrap wood, its conversion to energy, and disposal of by-products, and develop technical guidelines based on the results of such examination.



(c) Promotion of small hydroelectric power generation

In FY2011, the Ministry started to consider reforming regulations and systems in the energy sector mainly with the aim of promoting introduction of renewable energy. In FY2012, as part of the reforms, it will consider replacing the current authorization system for small hydroelectric power generation using water taken from rivers (dependant power generation) with a new registration system because such power generation has only small new effects on the flow of rivers.

(d) Promotion of wind power generation

In FY2011, the Ministry started to consider reforming regulations and systems in the energy sector. In FY2012, it will analyze details of standards for examining wind power generation equipment under the Building Standard Law and those of technical standards that electric structures are required to meet under the Electricity Enterprises Law and then consider unifying all these examination standards under the Electricity Enterprises Law as for photovoltaic power generation equipment. It plans to reach a conclusion in this regard by the end of the year.

There are problems peculiar to floating ocean wind power generation facilities installed in the open sea. The Ministry began to examine technical problems with the safety of floating and anchored equipment, such as the drifting, overturning, and sinking of such facilities, and in April 2012, it established technical standards for floating ocean wind power generation facilities in accordance with the Vessel Safety Law. MLIT will continue technical examinations of the safety of such facilities and formulate safety guidelines^{Note} in order to create an environment that enables spread and growth of floating ocean wind power generation facilities and make Japan's rules international standards.

Note : Safety guidelines will summarize specific design methods to meet technical standards among others. For example, when establishing a standard of “withstanding the maximum wind velocity expected for the next fifty years,” the Ministry will stipulate the types of meteorological data to be collected, calculation programs that can be used to evaluate the effects of winds, methods of experiments, and so forth.

Column Project to Use Renewable Energy from Sewage in Disaster-stricken and Other Areas

The Ministry is considering promoting a package of innovative energy utilization projects and reconstruction city planning with recovery and reconstruction of sewerage damaged by the Great East Japan Earthquake as its core.

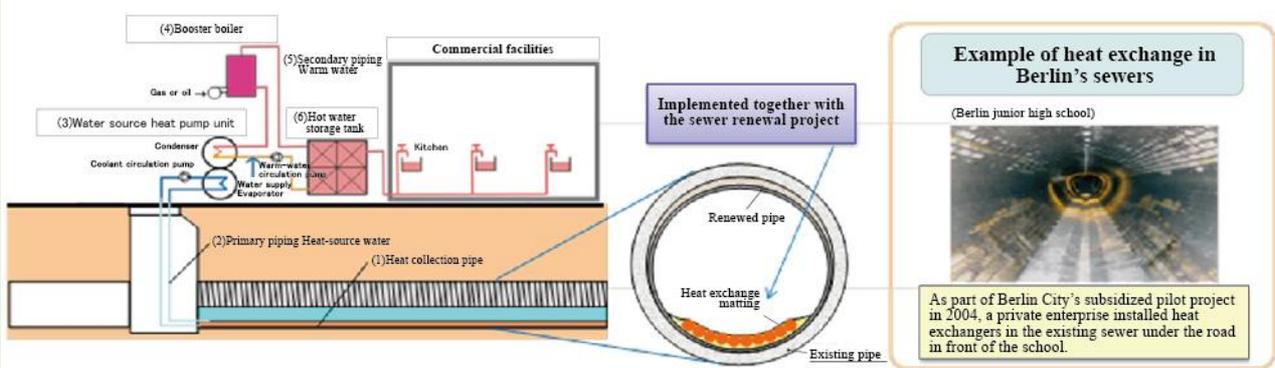
(Example in Sendai City, Miyagi Prefecture: Japan's first project to recover heat from sewers)

The Ministry is considering a project to install heat exchangers in sewers and use sewage heat to supply hot water to commercial facilities in the city employing technology to recover heat energy from sewage. These heat exchangers have brought satisfactory results in similar projects in Germany and other countries. Heat exchangers are installed in sewers at the same time that the damaged sewers are replaced with new ones. Therefore, as sewer replacement needs really grows in the future, the project is expected to provide greater opportunities to contribute to low-carbon city planning using sewage heat.

In FY2011, the Ministry verified the effects of the project, and the results of trial calculations indicated that hot water supply using sewage heat was advantageous than ordinary hot water supply using gas in terms of running cost, that investments could be recovered in around seven years, and that the former method would help reduce CO₂ emissions by about 30%.

In FY2012, as part of its project to test innovative sewerage technology (B-DASH Project), the Ministry aims to develop lower-cost, more energy-saving technology (for example, helping reduce CO₂ emissions by about 40% compared to gas-based hot water supply) by implementing a test project at the Osaka City Sewerage Science Museum, located next to Osaka City's Ebie sewage treatment plant. The policy of MLIT is to implement similar projects at larger business sites in the future by striving to further develop new technology and accumulate operation know-how.

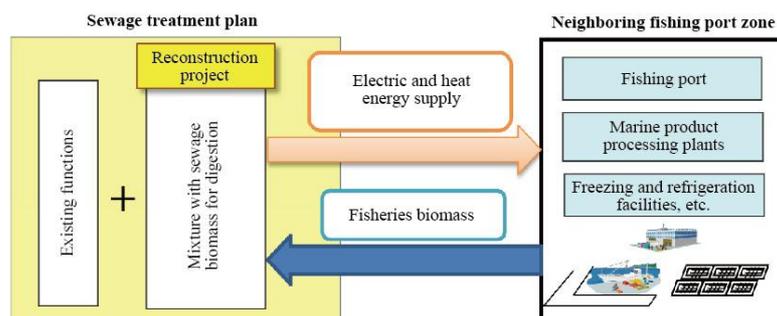
Conceptual Diagram of the Project for Commercial Facilities in Sendai City



(Example in Kesennuma City, Miyagi Prefecture: "Local production, local consumption" energy supply project utilizing biomass from fisheries)

In helping the recovery and reconstruction of damaged sewage treatment plants, the Ministry is considering making the most of not only sludge generated at marine product processing plants but also technology for recovering biogas from neighboring fisheries-related facilities and examining the ideal form of implementing projects through public-private partnership.

Conceptual diagram of synchronizing the recovery and reconstruction of sewage treatment plants with that of fisheries-related facilities in Kesennuma City



Mayor of Kesennuma addressing a local project meeting (November 21, 2011, Kesennuma city hall)



Field survey (November 21, 2011, Kesennuma final disposal site)



Source: MLIT

4 Growing need for cooperation among diverse entities

(Review and overhaul broad-based regional development policy including for the Tohoku region.)

Regarding the Tohoku broad-based development policy, which is the described future vision for the Tohoku region and broad-based projects, it will be revised to present a new regional vision that is sustainable and disaster resistant, based on the many valuable lessons and issues that were learned or identified through the restoration and reconstruction from the earthquake, such as promoting inter-regional cooperation based on assignment of large-scale projects and building coalition, establishing a mutually complementary system among different transportation modes, and securing substitutability and redundancy of the wide area traffic network.

In addition, broad-based development policies of other districts are also under revision to build a disaster resistant country and district.

(Support for the “New Public”)

In the course of the recovery and revival process from the Great Earthquake, various kinds of cooperation among different entities including NPOs, those from academia, business, and government have been forming. However, while the administration in the disaster-stricken area cannot support the residents’ minor needs for their daily living due to insufficient staff, there are some cases where supporting groups (Ex. NPOs) from other districts are not able to communicate smoothly with local residents and municipal governments. Therefore, it is necessary to establish a system to support organizations such as NPOs, in which local personnel who serve as a community organizer will be assigned as “a local coordinators”. The local coordinators will be provided expert knowledge and information, and work between the municipal government and each NPO to complement administrative services. MLIT decided to support this system as “the intermediate supporting system.” For instance, the local coordinator will match the appropriate organization (local company, local organization or NPO) to a community where not enough services like after-school care or welfare care are provided as a result of the earthquake.

In January 2012, MLIT assigned 11 organizations involved with community renovation, refugee support, and livelihood support, and will provide assistance to the activities of those organizations.

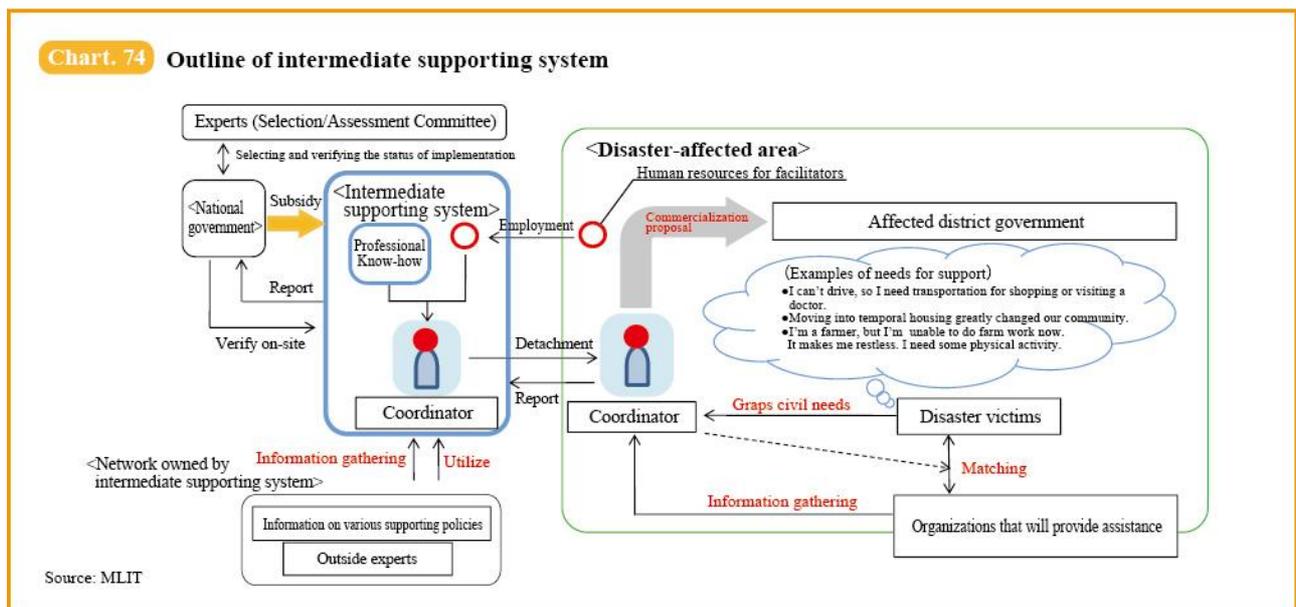


Chart. 75 Assigned intermediate supporting organizations

Name of organization	Name of the project	Project site
Specified non-profit organization, Ishinomaki NPO Center	Coordinating project for community renovation and living support in Ishinomaki City and Higashi-matsushima City	Ishinomaki City and Higashimatsushima City, Miyagi Prefecture
Specified non-profit organization, Machi-pot	Coordinating project for community renovation and living support in Kesenuma City and Tome City	Kesenuma City and Tome City, Miyagi Prefecture
Specified non-profit organization, Shizuoka Prefectural Volunteers Association	Coordinating project for living support in Ichinoseki City and Town of Shichigahama	Ichinoseki City and Town of Shichigahama, Iwate Prefecture
Specified non-profit organization, NPO Saitama Net	Coordinating project to support evacuees and their living in Kawauchi Village and Saitama Prefecture	Kawauchi Village, Futaba-gun, Fukushima Prefecture and Saitama Prefecture
Public Interest Incorporated Association, the City Planning Institute of Japan	Coordinating project for living support in Kitakami City and Otsuchi Town	Kitakami City and Otsuchi Town, Kamihei-gun, Iwate Prefecture
Specified non-profit organization, Gakuwari Net	Coordinating project for community renovation and living support in Minamisanriku Town	Minamisanriku Town, Motoyoshi-gun, Miyagi Prefecture
Kamaishi Platform Corporation.	Coordinating project to support community renovation in Kamaishi City	Kamaishi City, Iwate Prefecture
General Incorporated Association, Life Support Foundation	Coordinating project for community renovation and living support in Ofunato City	Ofunato Town, Iwate Prefecture
Life General Incorporated Association, Social Business Network	Coordinating project to support community renovation in Rikuzentakata City	Rikuzentakata City, Iwate Prefecture
Specified non-profit organization, Kyoto Disaster Volunteers Net	Coordinating project to support evacuees in Tomioka Town and Kawauchi Village	Tomioka Town and Kawauchi Village, Futaba-gun, Fukushima Prefecture
Specified non-profit organization, Symphony	Coordinating project to support evacuees in 6 prefectures in the Kinki area	Prefecture of Osaka, Kyoto, Hyogo, Shiga, Nara and Wakayama

Source: MLIT

Column Reconstruction of Okushiri Island, Hokkaido

At 10:17 p.m. on July 12, 1993, an earthquake with a magnitude of 7.8 occurred off southwestern Hokkaido. The tsunami reached shore 2-4 minutes later and 230 people (198 from Okushiri-cho) died or went missing.

In the reconstruction process, people faced challenges in common with the Great East Japan Earthquake, such as settlement transfer to the upland or fishery resuscitation.

The Aonae area of Okushiri-cho, southern part of Okushiri Island suffered the most damage from the tsunami and a fire that started after the quake.

Okushiri-cho constructed four housing complexes on a 20 to 30m elevated area, and about 190 households, mainly residents from the Aonae area, evacuated there en masse. (55 households were designated by the state-backed evacuating project.)

“The Group to Discuss the Reconstruction of Okushiri” formed by mainly residents in Aonae worked as an intermediate organization between the administration and the residents for their settlement transfer. This group had also taken a survey of the reconstruction process of Mount Unzen-Fugen and made suggestions to the town office about the reconstruction of the town based on a questionnaire completed by disaster victims. In accordance with the suggestions, the town administration adopted part of settlement transfer plan. The group also served as a coordinator for adjusting the restoration funds to the supporting projects as well as relief money to disaster victims.

On December 2011, five months after the earthquake, a draft plan of the master schedule on the restoration of the town was drawn up after conducting meetings many times to give explanations to local residents. The group served as a liaison between the administration and residents, and held many discussions with the town office. Thus, the mutual cooperation contributed to quick restoration of the town.

The group pointed out that the population aging rate in Okushiri Town is increasing and it is necessary to watch elderly residents when the collective relocation has started. The group also pointed out the necessity of getting specialist advice regarding the earthquake-proofing housing and the prevention of disasters for the construction of the new community.



(Promoting cooperation between the private and public sectors)

For restoration from the great earthquake, public entities shall endeavor not only to direct all their efforts but also to make the best use of knowledge, human resources, and money from private sectors to utilize the best of the private sector as the key driving force and funding for the restoration.

To promote project planning for restoration from the earthquake, MLIT asked for specific ideas from May to June 2011, and selected eleven research objectives for PPP/PFI projects. They are now ongoing to clarify the problems, methods, and possibility of introduction of PPP/PFI projects.

Chart. 76 Consideration of PPP/PFI projects for restoration from the earthquake

	Research objectives	Intended areas
1	Research regarding the PPP/PFI project for the preparation of disaster-recovery public housing tailored to specific regional characteristics.	Fukushima Prefecture, etc.
2	Research regarding the methods used by PPP/PFI for the reconstruction of public housing that is community formation available.	Tagajo City, Miyagi Prefecture, etc.
3	Research regarding the methods for rebuilding, maintenance, and management of the sewer system by PPP/PFI.	Yamamoto Town, Miyagi Prefecture.
4	Research regarding the disaster-response logistics supporting hub run by PPP/PFI.	Tono City, Iwate Prefecture.
5	Research regarding to applicable methods for the recovery and the use of port facilities carried out by PPP/PFI.	Miyagi Prefecture.
6	Research regarding the methods for improving evacuation models using PPP/PFI measures.	Ishinomaki City, Miyagi Prefecture.
7	Research regarding the marine area restoration plan carried out by PPP/PFI.	Iwaki City, Fukushima Prefecture
8	Research regarding the formation of temporary community worked by PPP/PFI for the restoration of disaster-stricken areas.	Yamada City, Iwate Prefecture.
9	Research regarding the development of disaster-recovery for towns by PPP/PFI.	City of Natori, Miyagi Prefecture.
10	Research regarding the reconstruction of government buildings by PPP/PFI.	Kamaishi City, Iwate Prefecture.
11	Research regarding the support to long-term evacuees by PPP/PFI.	Aizuwakamatsu City, Fukushima Prefecture

Source: MLIT

Column

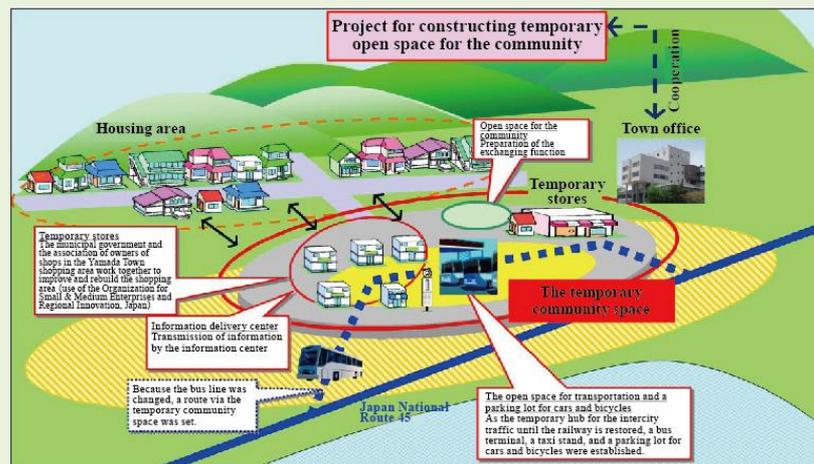
An approach to the developing community and assistance for livelihood for residents by promoting PPP (public-private partnership) /PFI in the disaster-stricken areas.

The recovery and reconstruction of the infrastructure closely linked to daily life, such as public facilities, is underway in the course of the restoration from the earthquake. Because it may take a certain period of time to complete the restoration from the disaster, it is necessary to secure space for commerce and service industries, which support residents' life and provide opportunities for personal interaction among residents to support the local community that existed before the disaster.

In Yamada Town, Iwate Prefecture, a town plan for preparation of open space is underway to promote interaction among citizens, to hold morning bazaars selling local agriculture products, or for the construction of a temporary bus terminal as well as stores based on the survey conducted by MLIT in fiscal 2011.

In the course of proceeding with the town development, the cooperation between the public and private sectors is considered, in which the public entity will work to procure the site by contracting to lease private land and preparing social facilities, while the private sector in local commerce and industry will establish an operational entity for managing temporary stores, operation and maintenance of facilities, or planning social events making use of their know-how.

As in the above case, more approaches for developing community and supporting livelihood of residents to stimulate private sector vitality and generate ideas for restoration from disasters can be expected.



After the Great East Japan Earthquake, various types of public-private partnerships (PPP) financed by the leading companies or cooperated with by several private companies have been formed and are promoting their own projects to provide assistance to disaster affected areas, or improve protection against disasters.

Such community-building in the disaster-stricken region through cooperation among diverse entities is an effective approach that can be used by other regions all over the country to solve regional problems or strive for economic independence. It will be, therefore, very important to develop and support such leading organizations in the future.

Case example Community-building by cooperation among diverse entities

1. Make use of “Community developing company” in Ishinomaki City

The central city of Ishinomaki has faced population outflow and become languid because of decreasing transient population influenced by the shut-down of the Ishinomori Mangakan, a cartoon museum, and the catastrophic damage of shops and other businesses, noticeable decline in convenience of life associated with the demolition of many stores, or the loss of employment opportunities.

Given this situation, Machizukuri Man-bow Co., Ltd., a community developing company established in 2001 with a capital of 60 million yen, has been designated as an operator of the recovery promoting project based on the “Act on Special Zones for the Recovery from the Great East Japan Earthquake.” The company will invite new investment and operate the recovery promoting project (scale of operation: 89 million yen).

The company will; (1) prepare community space and resting space for hospital users in response to the expansion of the transient population and the aging society,

(2) expand the transient population, cartoon and animation contents will be opened to the public with and without the city based in the Ishinomori Mangakan, (3) hold a Machinaka Fukkou (recovery of the downtown) March to sell local specialties that are produced in Ishinomaki, prepare gathering spaces through the use of vacant stores or unused land left by urban development, and (4) promote the historical-looking characteristics of community-building through the use of existing old warehouses and historical buildings.

To address the future population decline and aging of society, it is expected that not only creating of the life space and commercial function without vehicles but also developing a compact city having multi-functions, such as “Living,” “Working,” “Learning,” or “Enjoying” will be made.

2. Signal of Hope Project

The Ministry of Land, Infrastructure, Transport and Tourism in cooperation with the Reconstruction Agency and the Fishery Agency of the Ministry of Agriculture, Forestry and Fisheries of Japan has been supporting fishing industries and fishing harbors along the coastal area of Iwate, Miyagi, and Fukushima prefectures in the Tohoku region, which suffered enormous damage, in an effort to revive early on.

The Signal of Hope Project carried out by the private sector will provide necessary equipment for reopening of fish markets including refrigerated containers and vehicles for logistics to the main ports of those three prefectures until full-scale recovery is completed. The MLIT is assisting this project.



* The “Mangattan Liner,” train cars decorated with cartoons which are created by Shotaro Ishimori, a cartoonist. Although this train is now out of the operation, Machizukuri Man-bow Co., Ltd., is going to provide extra service with the train after the restoration of the Senseki line.

Source: MLIT



The equipment provided by the project

Photo: The ‘Signal of Hope’ Fund to Support the Resumption of Tohoku Fisheries

3. Assistance to disaster-stricken areas by parcel delivery foundation~Every parcel with a seed of hope~

Right after the Great East Japan Earthquake, YAMATO HOLDINGS CO., LTD., started a year-long project to donate ten yen for every parcel they deliver.

The total amount of relief funds collected by the program, which concluded on March 31, 2012, was 14.2 billion yen. All the relief funds were turned over to the “Great East Japan Earthquake Life, Industry Infrastructure Recovery, and Rebuilding Relief Fund” by the Yamato Welfare Foundation, a public interest incorporated foundation, to help rebuild the fishing and agriculture industries and infrastructure in affected area by “not just providing relief funds, but also by having them used to create new recovery models.”

In the “Recovery assistance program for marine product processing industry” conducted in Iwate Prefecture, a total of 1.6 billion yen was provided to 107 marine product processing companies that were unable to receive a national subsidy. A total of 31 projects including the above program were granted.

Marine products processing equipment purchased by the parcel delivery foundation



Photo: YAMATO HOLDINGS CO., LTD

4. Various movements of the disaster prevention agreement

Some municipal administrations have begun to conclude agreements with companies on their own regarding temporary evacuation centers for people trapped in offices and unable to return home, or how to cope with flooding.

In January 2012, the Shibuya Ward Office concluded an agreement with the All Japan Real Estate Association Shibuya Branch and the Tokyo Takken Association Shibuya Branch for assistance for people trapped in offices and unable to return home. Both associations will ask for participation from shops and restaurants and ask them to offer resting space, drinking water, toilet use, and traffic information for people unable to return home.

The Minato Ward Office concluded an agreement with Mori Building Co., Ltd., in March 2012 to offer evacuation space, stockpiled food, drinking water, emergency evacuation tools, and evacuation guidance near railway stations.

The Koto Ward Office concluded an agreement with four companies within the ward in September 2012 to offer their properties as evacuation centers and assistance for evacuation guidance to neighborhood residents in the event of massive floods such as a tsunami.

More broadly, the Prefectures of Saitama, Chiba, Tokyo, and Kanagawa and the cities of Yokohama, Kawasaki, Chiba, Saitama, and Sagami-hara have concluded agreements with convenience stores, fast-food restaurants, family restaurants, taverns, and Karaoke-spaces to offer water, toilet use, and provide traffic information.

5 Approach and Contributions to Overseas Countries

(Significant Decline in Tourism Industry)

The number of foreign visitors to Japan in 2011 showed a significant decline and was approximately 6.22 million (decreased by 27.8% over the previous year) due to the influence and other factors of the Great East Japan Earthquake. However, looking at the monthly change of the number of foreign visitors, amount of decline from the fifth month after the great earthquake (August 2011) is steadily shrinking compared to that of the previous year; thus, it can be considered that recovery measures against the great earthquake and the nuclear power plant accident have been effectively implemented. As for the number of domestic tourists, overall demand for traveling itself recovered to the point of exceeding the demand in the previous year; however, the number of overnight guests at accommodations, which mainly target tourists, is still down.

(Tourism Promotions, etc.)

Taking into account these situations, it is necessary to re-formulate promotions for overseas travelers in order to deal with the decline in the number of foreign visitors to Japan, upon recovering their trust in safety and security that are the preconditions of visiting.

By July 2011, the MLIT held a total of over 100 presentations overseas in collaboration with the Japan National Tourism Organization (JNTO), diplomatic establishments overseas, and other organizations in addition to inviting a total of approximately 800 companies and 1,000 media and travel agencies from abroad under the VISIT JAPAN Urgent Response Project. Moreover, we resumed the promotion of attractions in Japan to consumers through websites and magazines from October 2011, and from January 2012 further strengthened the promotion in the five largest markets (Korea, China, Taiwan, the United States, and Hong Kong) where there are especially high numbers of tourists to Japan. Furthermore, we put effort in developing an environment to accept foreign visitors in order to prevent cancellation of

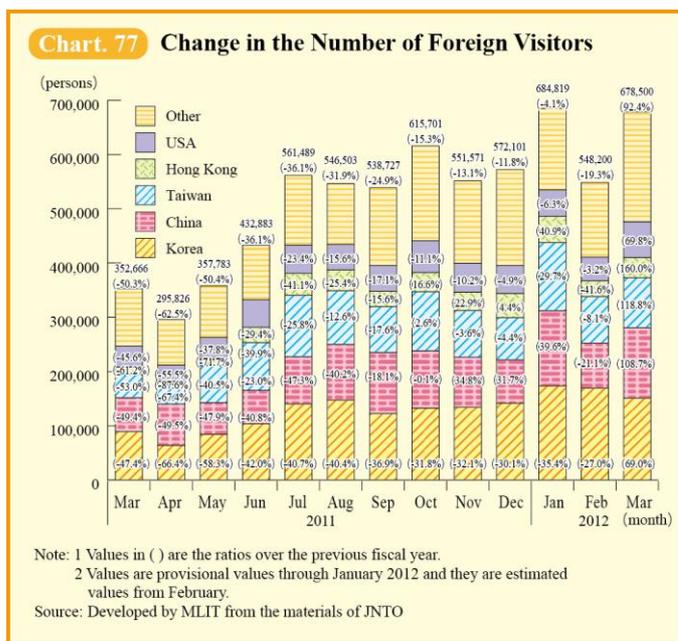
international conferences, etc., and to recover demand in the future. As a result, there have been positive effects that the current situations in Japan are reported accurately in other countries, and that travel agencies have begun resuming the sale of the tours, which they had suspended, and creating and selling new travel packages. Additionally, the MLIT conducted the “Japan. Thank You.” campaign from February 2012 by creating a special logo and posters, and displaying banners in major cities, such as Tokyo, Yokohama, and New York, to strengthen the bond between Japan and the world and to recover the demand for visiting Japan.

(Countermeasures against Harmful Rumors on Trading)

At the ports in Japan that are the gateways for export trading, overseas shipping companies, etc., were concerned about calling at the ports in Japan or about the safety of the goods shipped out from Japan. Therefore, the MLIT summarized the radiation doses in the air and seawater measured at the ports in Tokyo Bay and afflicted areas, and publicly released the information everyday on the MLIT website in Japanese, English, Chinese, and Korean (it was updated twice a day at first and it became once a week as of the April 2012). Then we notified the concerned agencies, such as the port manager of each country and the customs, etc., of this information through our diplomatic channels. Through these measures, we provided accurate information about each port in Japan, eliminated the concerns of shipping companies and crews, maintained the calls at the ports in Japan and showed the safety of the goods shipped out from Japan to overseas ports.

Additionally, we subsidized the installation of a stationary radiation counter at Keihin Port in order to prevent return, waiting of ships, and delays in cargo handling, etc., if radiation contamination is found at an overseas port to which the goods are exported.

Also in the shipbuilding industry, overseas ship owners were also concerned about residual radioactive substances on ships and ship supplies built or manufactured in Japan. In response, the MLIT accepted the requests from shipbuilding-related companies and strived to eradicate damages due to harmful rumors by issuing confirmation certificates to prove that the results of radiation measurements conducted by the companies for the ships, etc., manufactured in Japan were obtained by an appropriate measuring method.

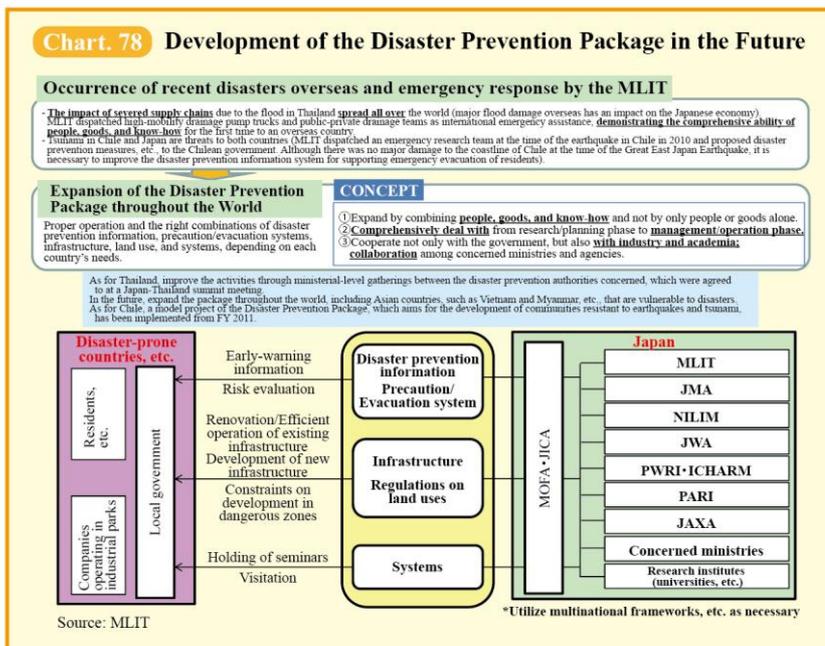


(International Contribution by the Disaster Prevention Package)

Severed supply chains suffered serious damage in and out of Japan after the Great East Japan Earthquake. The supply chain was cut off in Thailand due to flooding that occurred in October 2011 and it affected not only Thailand, but also many other countries including Japan. In order to support a quick recovery from the damage of the flooding in Thailand, the MLIT dispatched high-mobility drainage pump trucks and public-private drainage teams as international emergency assistance for the first time to an overseas country, and engaged in draining water for a total of 32 days.

In collaboration with concerned ministries, agencies such as JICA, industry, and academia, we aim to establish a new international contribution model in which Japan and other countries strengthen their bonds and grow together by strategically and

globally developing the Disaster Prevention Package, which comprehensively handles from the research planning phase to the management/operation phase by combining people, goods, and know-how involving disaster prevention information, precaution/evacuation systems, infrastructure, regulations on land use, and systems, depending on each country's needs in order to prevent disasters and reduce damages in the future based on our effort with the flooding in Thailand.



Column MLIT's effort in the flood disaster in Thailand

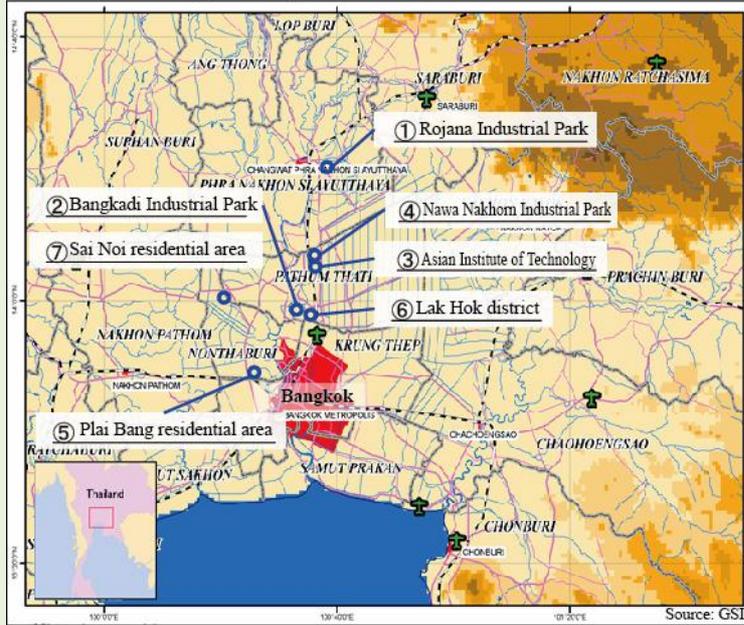
In October 2011, the rain that had continued to fall since June caused a flood in the river basin of Chao Phraya, which inundated an extensive area, including Ayutthaya and seven nearby industrial parks. The number of dead or missing reached 800 and the impact of the flooding spread all over the world, causing severed supply chains and other damages outside the country.

Upon receiving a request from the Thai government, we dispatched drainage professionals and 10 drainage pump trucks ^{Note} with high drainage capacity and mobility that were owned by the development bureau of the Chubu region for the first time to an overseas country as a part of drainage support for flood-afflicted Thailand.

The drainage pump trucks departed Yokohama Port on November 5, arrived at Thailand on November 18, and conducted drainage activity in a total of seven districts, including Rojana Industrial Park, other industrial parks, universities, and residential areas, etc., starting from November 19. For this activity, a team of 51 professionals (total of 880/day) from the MLIT's regional development bureau, Ministry of Foreign Affairs, JICA, and private corporations as an emergency international assistance team were dispatched and conducted arrangements with the local concerned personnel to perform on-site inspections and give technical instructions to Thai workers, etc. As a result, we succeeded in draining approximately 810 million square feet of water (approximately seven times the volume of Tokyo Dome and 23,000 times the volume of a 25m swimming pool) in 32 days by December 20. In addition, after the flood occurred, the Incorporated Administrative Agency International Centre for Water Hazard and Risk Management (ICHARM) publicly announced their analysis and prediction of changes in the inundation status at Chao Phraya River using the Rain-Runoff Inundation Model (RRI Model).

This was the very first attempt to combine people and goods, and we will promote the provision of the Disaster Prevention Package using Japan's comprehensive capability to reinforce the disaster-prevention cooperation relationship not only in time of disasters, but also in normal times.

[Locations of Drainage Activity]



[Drainage Work]



[Technical Instructions to Thai Workers]



[Before Drainage (November 23)]



Source: MLIT



[After Drainage (November 26)]



Rojana Industrial Park

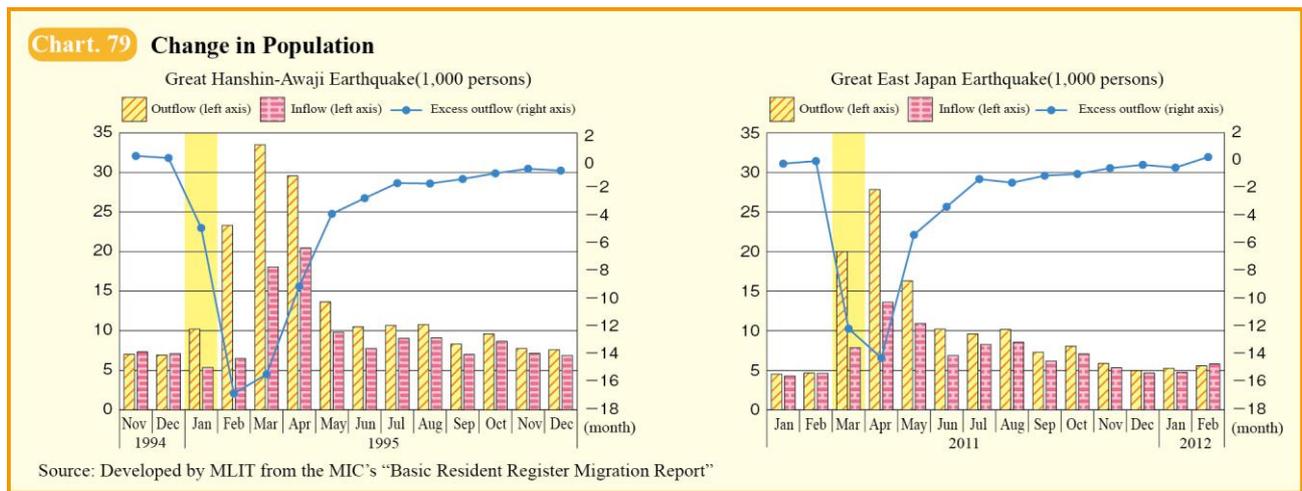
Note: The drainage pump trucks dispatched to Thailand have a drainage capacity of 30m³ per minute and are capable of emptying a 25m swimming pool in approximately 10 minutes. They were employed for the drainage activity in the tsunami-afflicted areas after the Great East Japan Earthquake as well.

Reference 1 Great East Japan Earthquake and Reconstruction from the Great Hanshin-Awaji Earthquake

One year has already passed since the occurrence of the devastating Great East Japan Earthquake. Although the recovery of infrastructure has been steadily carried out, there are issues in terms of reconstruction of the afflicted-towns, such as building consensus for disaster preventive collective relocation. In this reference, we look back to the recovery from the Great Hanshin-Awaji Earthquake that occurred in January 1995 and compared the conditions of the two earthquakes over a period of one year after their occurrences.

[Population Outflow]

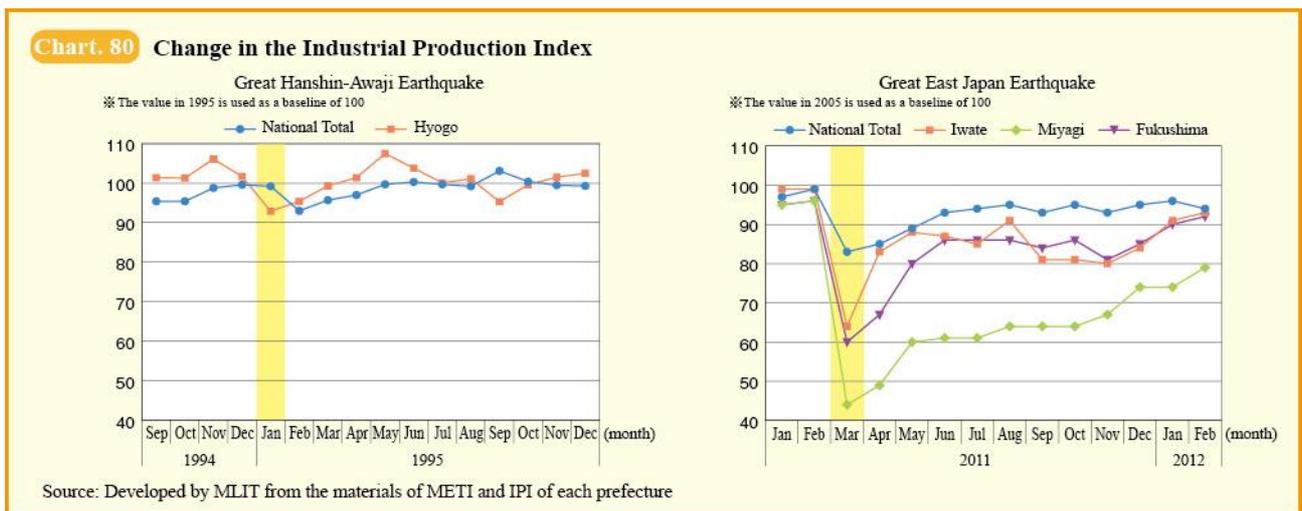
A major population outflow occurred in the afflicted areas after both the Great Hanshin-Awaji Earthquake and Great East Japan Earthquake. Because the afflicted-area of the Great Hanshin-Awaji Earthquake was a major city, the population outflow from Hyogo Prefecture alone right after the occurrence was nearly 17,000 greater than the inflow in February 1995. In the Great East Japan Earthquake, the population outflow from Iwate, Miyagi, and Fukushima (3 Tohoku Prefectures) together right after the occurrence was over 14,000 greater than the inflow in April 2011.



[Production Status]

Production level in Hyogo Prefecture recovered to that before the earthquake in three months. Production level after the Great East Japan Earthquake, on the other hand, significantly fell and it also had a great impact throughout the nation.

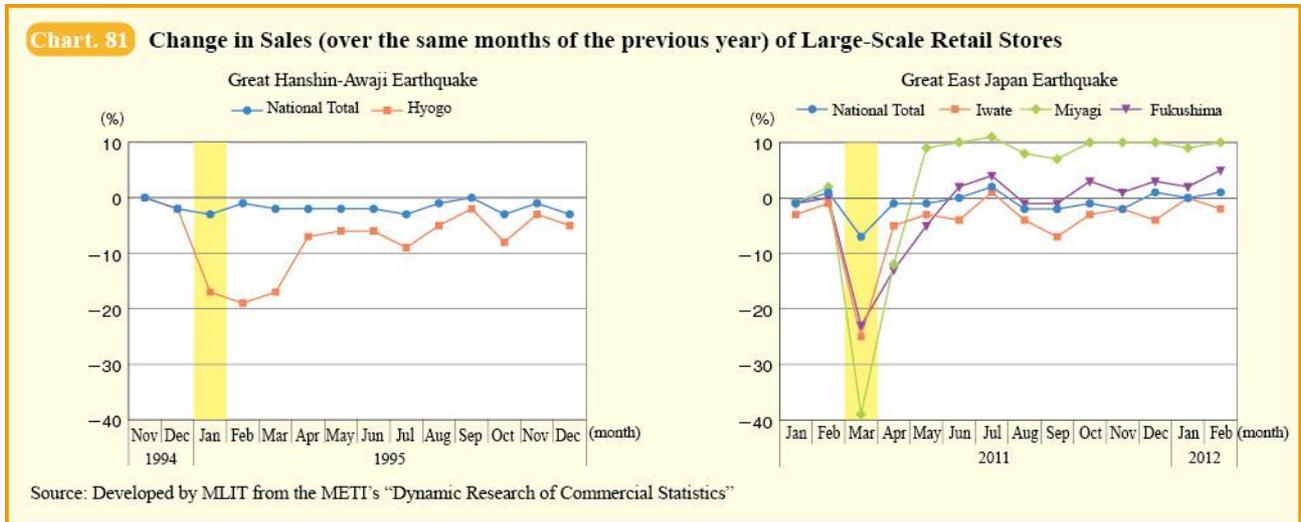
This was because the earthquake caused a restraint on power supply, cut off supply chains, and caused other issues, impacting the economy throughout the nation.



[Consumption Status]

After the Great Hanshin-Awaji Earthquake, the consumption level in the afflicted area of Hyogo Prefecture significantly fell. It later recovered, but it changed at a lower level compared to that before the earthquake.

After the Great East Japan Earthquake, on the other hand, the sales in all three prefectures significantly fell in March. They drastically recovered after April, and that of Miyagi Prefecture especially has been maintaining a dramatically higher level of sales compared to that before the earthquake.



[Employment Status]

The ratio of job offers to job seekers in Hyogo Prefecture showed an increase after the Great Hanshin-Awaji Earthquake, and it changed at a slightly higher level for the next year compared to that before the earthquake.

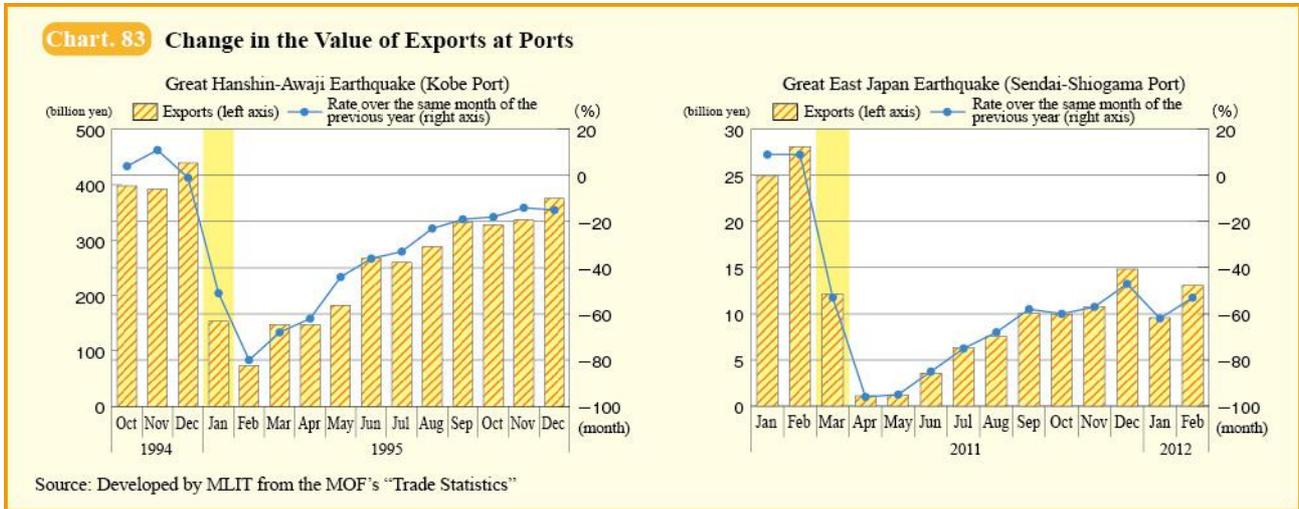
The ratio of job offers to job seekers in the three prefectures, on the other hand, significantly fell after the Great East Japan Earthquake; however, it drastically increased from May and their ratios have been exceeding that of the entire country since January 2012.

The reason for this can be inferred to be that the Great East Japan Earthquake generated more job offers that are related to reconstruction work than the Great Hanshin-Awaji Earthquake because the impact of the former was more extensive than the latter.



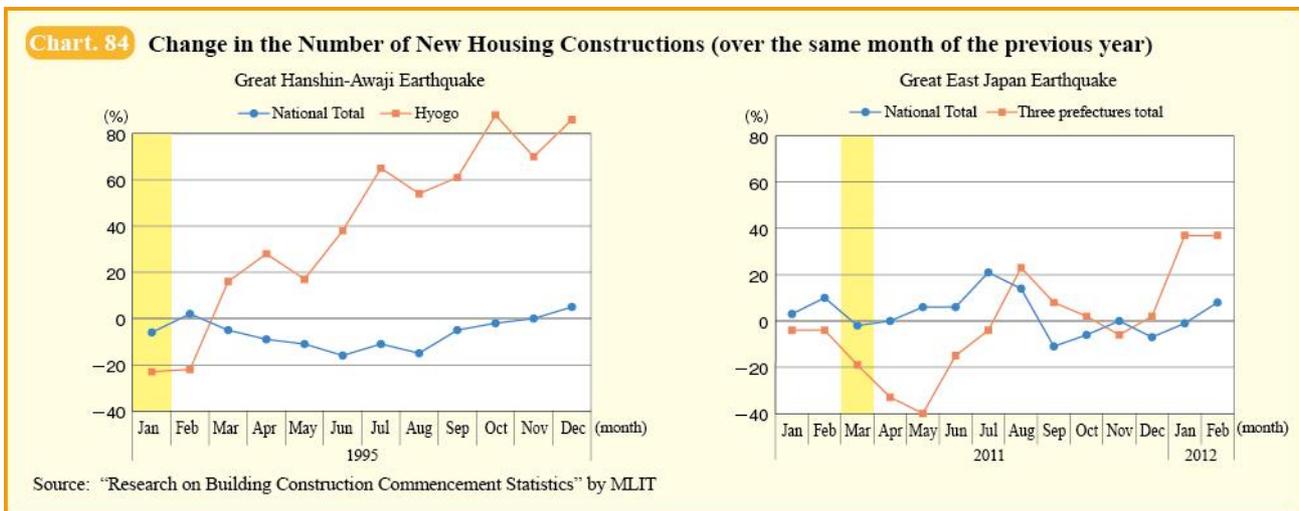
[Trade Trend at Ports]

The value of exports at Kobe Port, which was afflicted by the Great Hanshin-Awaji Earthquake, significantly decreased. It decreased by 80% in February 1995 over the same month of the previous year; however, it later recovered to 80% of the level of before the earthquake in one year. The amount of exports at Sendai-Shiogama Port after the Great East Japan Earthquake significantly decreased by nearly 100% in April 2011 over the same month of the previous year. It began to gradually recover after June, and it recovered to 60% of the level before the earthquake by the end of 2011.



[Housing Construction]

Number of housing construction starts in Hyogo Prefecture after the Great Hanshin-Awaji Earthquake significantly increased with over 80% increase in some months over the same months of the previous year. That after the Great East Japan Earthquake, on the other hand, increased toward summer over the same months of the previous year, but there was no extensive growth after that. The reasons for this can be inferred to be that there have been issues, such as reconstruction planning and securing of land which integrate town development involving collective relocation to uplands, etc., and the establishment of restricted areas due to the unclear power plant accident.



[Reconstruction Town Development]

In the reconstruction from the Great Hanshin-Awaji Earthquake, land readjustments for a total of 20 business districts and a total area of 255.9ha in Kobe City, Ashiya City, Nishinomiya City, Amagasaki City and Awaji City in Hyogo Prefecture were determined. 70% of the readjustments (14 districts) were completed by FY 2005 (10 years after the earthquake), but readjustments for all districts were finally completed on March 28 2011.

Chart. 85 Land Readjustment in the Reconstruction from the Great Hanshin-Awaji Earthquake

City	City Plan	Business District	Area (ha)	Date of Completion
Kobe	Moriminami	Moriminami 1 st district	6.7	February 2003
		Moriminami 2 nd district	4.6	February 2003
		Moriminami 3 rd district	5.4	March 2005
	Rokko Station West	Rokko Station West district	3.6	July 2001
		Rokko Station North district	16.1	March 2006
	Matsumoto	Matsumoto district	8.9	December 2004
	Misuga	Misuga East district	5.6	April 2003
		Misuga West district	4.5	March 2005
	Shinnagata/Takatori	Shinnagata Station North district	8.5	March 2011
		Takatori East 1 st district	19.7	February 2001
Takatori East 2 nd district		59.6	March 2008	
Minatogawachou 1&2-choume		1.5	September 2002	
Kamimaechou 2-choume North		0.5	December 2000	
Ashiya	West Ashiya	West 1 st district	10.3	May 2003
		West 2 nd district	10.7	February 2005
	Central Ashiya		13.4	May 2002
Nishinomiya	Morigu		10.5	October 2001
	Nishinomiya Kitaguchi Station Northeast		31.2	October 2008
Amagasaki	Tsukiji		13.7	November 2007
Awaji	Tomishima		20.9	October 2009
Total	20 business districts		255.9	

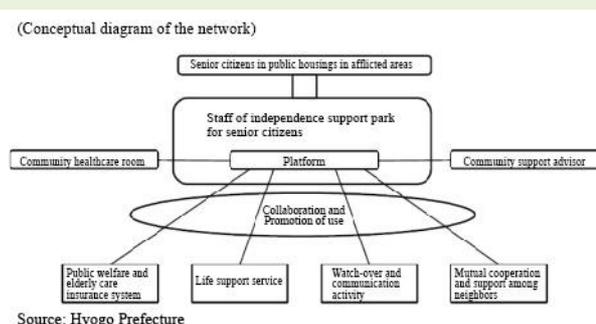
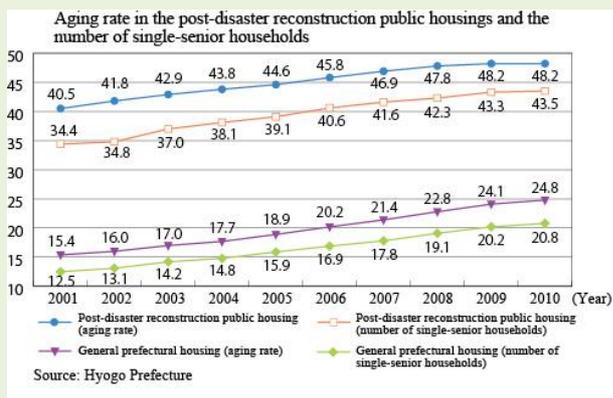
Source: Developed by MLIT from Hyogo Prefecture's "About the Reconstruction Status from the Great Hanshin-Awaji Earthquake"

Column

Current Issues and Efforts with Respect to Reconstruction from the Great Hanshin-Awaji Earthquake

1. Independence support for senior citizens

Since the occurrence of the earthquake, staffing of SCS [Note1](#) and LSA [Note2](#), establishment of community plazas [Note3](#), and other activities have been implemented to watch over senior citizens and develop communities; currently, the routine-visit type SCS is being changed to a stationary type independence support park (Koureisha Jiritsu Shien Hiroba). The MLIT have been continuing to develop the independence support park project and to promote formulation of a system to provide general support for senior citizens by networking agencies and human resources from various communities because aging of the afflicted people and deterioration of community functions are the issues.



2. Invigoration of towns

Since the occurrence of the earthquake, the MLIT have been supporting efforts to invigorate the afflicted towns through general development projects, invigoration projects for shopping areas, and support projects for town reconstruction and development, etc. The MLIT have begun to gradually achieve positive results in the invigoration of towns lead by the local residents, such as an increased number of visitors from outside thanks to the Sangokushi Project and the monument of Tetsujin 28-Go in front of the Shinnagata Station (both of them are the best works of Mr. Mitsuteru Yokoyama who is originally from Kobe), invigoration of shopping areas centering on the mascot of Nagatajinjamae Shopping Area “GUJI”, etc.; therefore, the MLIT are supporting activities, in which the local residents of the communities continue to voluntarily engage in the invigoration in consideration of the future images of their communities.



3. Education and Preparation

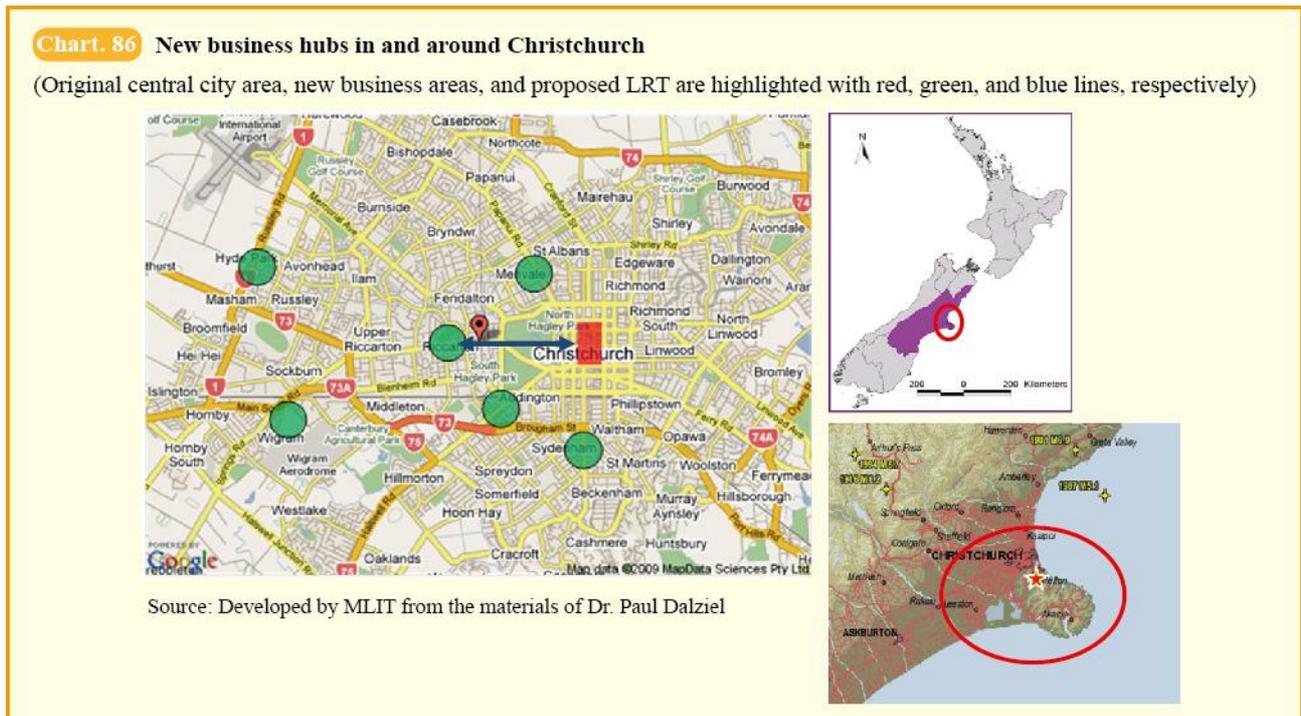
While time passes since the occurrence of the earthquake, there has been a concern for the occurrence of a Tonankai/Nankai Earthquake; therefore, we have been passing down and spreading the knowledge that we have obtained through the experience and lessons from the earthquake by promoting activities to not “forget 1.17”, a prefectural civil movement to improve disaster prevention capability, and Hyogo Disaster Prevention Education. Besides continuing with these activities, the MLIT have been putting effort in integrating the methods and know-how, which have been obtained through the process of disaster prevention and disaster reduction or reconstruction, into the social system in order to establish and stabilize them as a “new disaster culture.”

Note 1: SCS = Senior Citizen Supporter. The supporters make routine visits to senior citizens, who live in the post-disaster reconstruction public housings, etc., with no special housings for senior citizens, and watch over them.
Note 2: LSA = Life Support Adviser. The advisors are stationed at special housing for senior citizens and watch over them.
Note 3: Community Plazas = These were developed in post-disaster public housing to function as facilities to be utilized for communication among the occupants or as a center for community welfare.

Reference 2 Earthquake Reconstruction in New Zealand

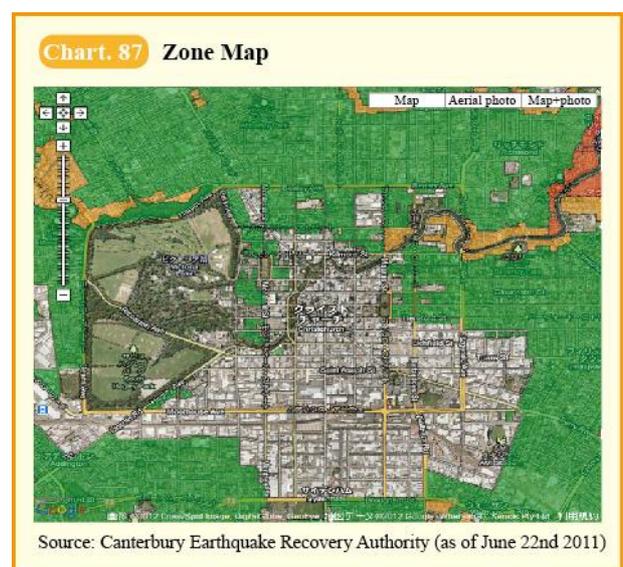
In February 2011, one month before the Great East Japan Earthquake, a magnitude 6.3 earthquake hit Christchurch, New Zealand. The earthquake mainly damaged the central area of the city, killing 185 people (as of February 9, 2012) and destroying churches, which symbolized the city, as well as other historical buildings. Moreover, 7,000 plus aftershocks occurred by August 2011 and caused damage, such as the breakdown of infrastructure and liquefaction, etc. As a result, the city eased the regulations for business location, and more than 60% of the 5,000 companies that used to be situated in the central business district, relocated their offices to the suburbs.

Many of the educational institutions in the central city area were also damaged by the earthquake; therefore, the city has proposed that public and private higher education institutions build combined campuses together in the central city and to set up LRT between the university campuses in the suburbs, including dormitories.



Since the earthquake, the New Zealand government has been proceeding with reconstruction by classifying the afflicted area into four zones, taking into account the level of damage, cost-effectiveness of reconstruction, and social influence.

- Red Zone: Areas where short to medium term reconstruction is difficult due to significant damage and where there is a possibility of secondary disasters, such as aftershocks. The government has been providing support to the house owners in the Red Zone in order to promote disaster preventive relocation by purchasing the afflicted housing and finding places for relocation, etc.
- Green Zone: Areas with low level of damage. Reconstruction is promoted in accordance with the new building standard in this zone.
- Orange Zone: Areas, which needs research and analysis toward the planning of reconstruction.
- White Zone: Vacant land under the plan for reconstruction (areas with no buildings, etc.)



Reference 3 Major Budget, Legislations, and Proposals, etc., with Respect to the Administration by MLIT in Response to the Great East Japan Earthquake

Chart. 88 Major budget and legislation

Budget	
- FY2011 First Supplementary Budget (Passed on May 2, 2011)	Total of approx. 4 trillion yen: construction of temporary housings (482.9 billion yen) and infrastructure reconstruction (1.2019 trillion yen), etc.
- FY2011 Second Supplementary Budget (Passed on July 25, 2011)	Total of approx. 2 trillion yen: disaster victims relief money (300 billion yen) and local allocation tax (545.5 billion yen), etc.
- FY2011 Third Supplementary Budget (Passed on December 11, 2011)	Total of approx. 9.5 trillion yen: Great East Japan Earthquake reconstruction grant (1.5612 trillion yen) and cost for disaster preventive measures (575.2 billion yen), etc.
- FY2012 Budget (Passed on April 5, 2012)	Total of the major costs in relation to the Great East Japan Earthquake is 3.25 trillion yen: additional public projects (509.1 billion yen) and cost for nationwide disaster preventive measures (482.7 billion yen), etc.
Legislation	
- Act on the Temporary Special Provisions of National-Tax-Related Laws in Relation to the Great East Japan Earthquake Victims, etc. (Act No. 29 of April 27, 2011) - Act on Partial Amendment of the Local Tax Act (Act No. 29 of April 27, 2011)	Prescribed reduction measures for various tax burdens in response to the Great East Japan Earthquake for tax reasons.
- Act on the National Government, etc., Taking Over Constructions for Reconstruction of Disaster-Stricken Public Civil Engineering Facilities Due to the Great East Japan Earthquake (Act No. 33 of April 29, 2011)	Prescribed special provisions so that the national or prefectural government can conduct constructions for the reconstruction of public civil engineering facilities based on the requests from afflicted local governments.
- Act on the Special Provisions of Building Restrictions in Significantly Afflicted Urban Areas due to the Great East Japan Earthquake (Act No. 34 of April 29, 2011)	This enables restriction and prohibition on construction of buildings in specified areas for the period of six months (or eight months at maximum if extended) from the date of the occurrence of a disaster.
- Act on Special Financial Support and Subsidy to Deal with the Great East Japan Earthquake (Act No. 40 of May 2, 2011)	Increase the level of support rate for the reformed public housings or urban facilities, etc. through financial support for the reconstruction of public facilities, etc.
- Basic Act on the Great East Japan Earthquake Reconstruction (Act No. 76 of June 24, 2011)	Prescribed the particulars, which will be the basis for securing fund and developing special reconstruction zones, and basic policy for the establishment of the Reconstruction Agency, etc.
- Act on the Great East Japan Earthquake Special Reconstruction Zone (Act No. 122 of December 14, 2011)	Established a special reconstruction system for implementing special provisions of the systems and providing tax, financial, and monetary support in one place.
- Act on the Development of Tsunami Disaster Preventive Communities (Act No. 123 of December 14, 2011)	Promote the Development of Tsunami Disaster Preventive Communities throughout the nation with Multi-Layered Defense against the largest class tsunami by combining measures from the viewpoint of both software and hardware.
- Act on the Establishment of the Defined the affairs and organization of the Reconstruction Agency (Act No. 125 of December 16, 2011)	Defined the affairs and organization of the Reconstruction Agency, which takes the prime minister as its chief, under the jurisdiction. The Reconstruction Agency assumes a role in management and supervision of reconstruction projects, special reconstruction system, reconstruction grants, and reconstruction of Fukushima, etc.
- Act on Special Measures for the Reconstruction of Fukushima (Act No. 25 of March 30, 2012)	Promote reconstruction from the nuclear power accident by prescribing special measures, etc. for the reconstruction of industries in Fukushima.

Chart. 89 Major proposals, etc.

Year Month	Field	Proposer or Reporter	Title
2011 April	Sewerage	Sewerage Earthquake/Tsunami Countermeasures Technology Research Committee	An emergency technical proposal in reconstructing sewerage facilities
June	Sewerage	Sewerage Earthquake/Tsunami Countermeasures Technology Research Committee	Step-by-step emergency reconstruction
July	Port	Disaster Prevention Group of Port Section of the Transport Policy Council	Comprehensive tsunami countermeasures at ports and harbors (interim report)
	General	Social Infrastructure Council, Planning Group of Transport System Section of the Traffic Policy Council	Concept for the development of tsunami disaster preventive communities
	Coast/River	Water and Disaster Management Bureau, Ports and Harbors Bureau	About the "Setting Method, Etc. of the Water Levels of Design Tsunami": "Standard in Determining the Heights of Sea Embankments That Are the Basis for the Formulation of Reconstruction Plan"
	Road	Committee for Reviewing the Role of Expressway	An emergency proposal based on the Great East Japan Earthquake
	Land Plan	Disaster Prevention Committee of Policy Group of the Land Council	A proposal for the development of a disaster-resistant land: "Preparation for Major Disasters Based on the Idea of Disaster Elimination"
August	River	River Tsunami Countermeasures Research Committee	An emergency proposal with regard to the countermeasures against the tsunami which travels up river
	Sewerage	Sewerage Earthquake/Tsunami Countermeasures Technology Research Committee	Concept for the full-scale reconstruction of the sewerage facilities afflicted by the Great East Japan Earthquake
	General	Disaster Risk Management HQ of the MLIT	A collection of know-how at the time of disasters: "88 Useful Tips and Know-how in Emergency Situations"
Water and Disaster Management Bureau		Revision of the disaster preventive plan by the MLIT	
September	Environment	Social Infrastructure Council, Environment Group of Transport System Section of the Traffic Policy Council	Environmental perspective in the Great East Japan Earthquake reconstruction: "Toward the Achievement of Sustainable Society"
	Meteorological Information	JMA	About the direction of improvement of tsunami warning, based on the tsunami disaster due to the Great East Japan Earthquake
October	Urban Park	City Bureau	Basic concept for the development of parks and greens in relation to the Great East Japan Earthquake reconstruction (interim report)
	Airport	Airport Tsunami Countermeasures Research Committee	Policy on tsunami countermeasures at airports
November	Coast	Coast Tsunami Countermeasures Research Committee	Basic concept with respect to the reconstruction of sea embankments, etc. afflicted by the Great East Japan Earthquake and tsunami in 2011
	Housing	Housing Bureau	About the additional knowledge/findings with respect to the safe building designing methods, etc. in terms of structural strength against tsunami
	River	Water and Disaster Management Bureau	Guideline for the consideration of landscape in reconstructing river/coast structures
	Sewerage	Research Committee for Radioactive Substance Countermeasures in Sewerage	Interim summary
December	Road	Committee for Reviewing the Role of Expressway	Role of expressways in the future (interim summary)
	Logistics	Advisory Conference for the Basic Concept of the Relief Supply Logistics	Basic concept of the relief supply logistics
	General	MLIT	Basic policy on the promotion of tsunami disaster preventive communities
2012 January	Urban	Urban Bureau	About the operation of the urban development projects in the Great East Japan Earthquake afflicted areas (guidance)
February	Meteorological Information	Committee for the Handling of Informational Documents and for the Announcement Standard, etc. of Tsunami Warning	A proposal with regard to the handling of informational documents and to the announcement standard, etc. of tsunami warning
March	Sewerage	Sewerage Earthquake/Tsunami Countermeasures Technology Research Committee	Vision for sewerage facility designing in consideration for tsunami countermeasures
	Urban Park	Urban Bureau	Technical policy with regard to the development of parks and greens in relation to the Great East Japan Earthquake reconstruction
	Railway	Council for the Resumption of Operation of the Railways in the Capital Area at the Time of a Major Earthquake	A report by the Council for the Resumption of Operation of the Railways in the Capital Area at the Time of a Major Earthquake
April	Land Plan	MLIT	A meeting with regard to the backup of the key functions in Tokyo area (second summary)

Chapter 2 Promoting sustainable, vigorous development of the national land and regions

As stated in the previous chapter, certain changes in policies by the Ministry of Land, Infrastructure, Transport and Tourism have been made in response to reconstruction after the Great East Japan Earthquake. On the other hand, the Ministry has been responding to changes in the social and economic structure, such as declining population, aging society, financial restrictions, and intensifying international competition, which existed before the Earthquake. From now on, how to advance the promotion of sustainable, vigorous development of the national land and regions, combining the restrictions existing before the Earthquake and the changes in policies this time will be examined.

“Sustainable” mentioned here, in general, refers to “meets the needs of the present without compromising the ability of future generations to meet their own needs,” as stated in the World Commission on Environment and Development/Brundtland Commission (1987).

National land and regions need to be developed by closely examining what kind of national land and regions we should preserve for the next generation, adding changes in policies generated through the post-earthquake reconstruction.

This chapter indicates the current status, issues, and future directions regarding the promotion of sustainable, vigorous development of the national land and regions.

Section 1 Current status and issues regarding the promotion of sustainable, vigorous development of the national land and regions

1 Declining population, aging population, and population migration

The total population of Japan began decreasing after peaking at 128.08 million in 2008. The National Institute of Population and Social Security Research has estimated the population will decrease to 99.13 million, falling below 100 million, and furthermore, it will decrease to 86.74 million (a decrease of 41.32 million) by 2060. In addition, the ratio of the aging population (percentage of population aged 65 and over) is estimated to increase to 39.9% by 2060, rising from 23.0% in 2010. Japan is facing an unprecedented super-aging society.

The ratio of the aged in Japan is at an incomparably high level by international standards. When compared with Western countries, it is found that the aged ratio of Japan is at the highest level and the speed of aging is extremely high. When compared with Asian countries, the growth of the aged ratio during the estimation period is faster in other countries, including South Korea, but the aged ratio of Japan is still the highest, exceeding other countries.

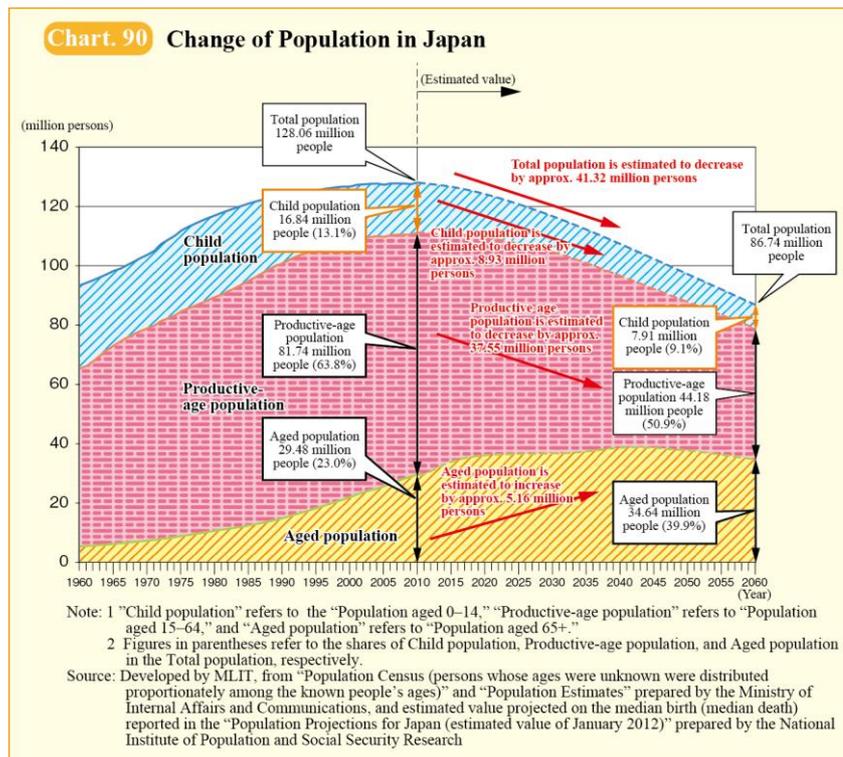
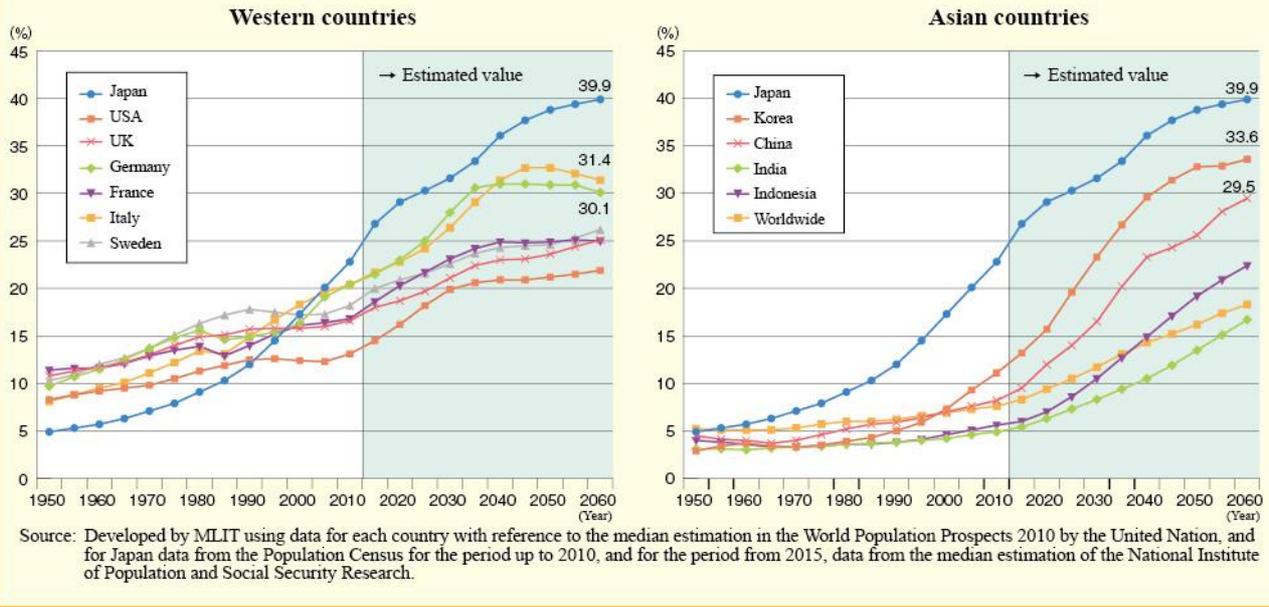
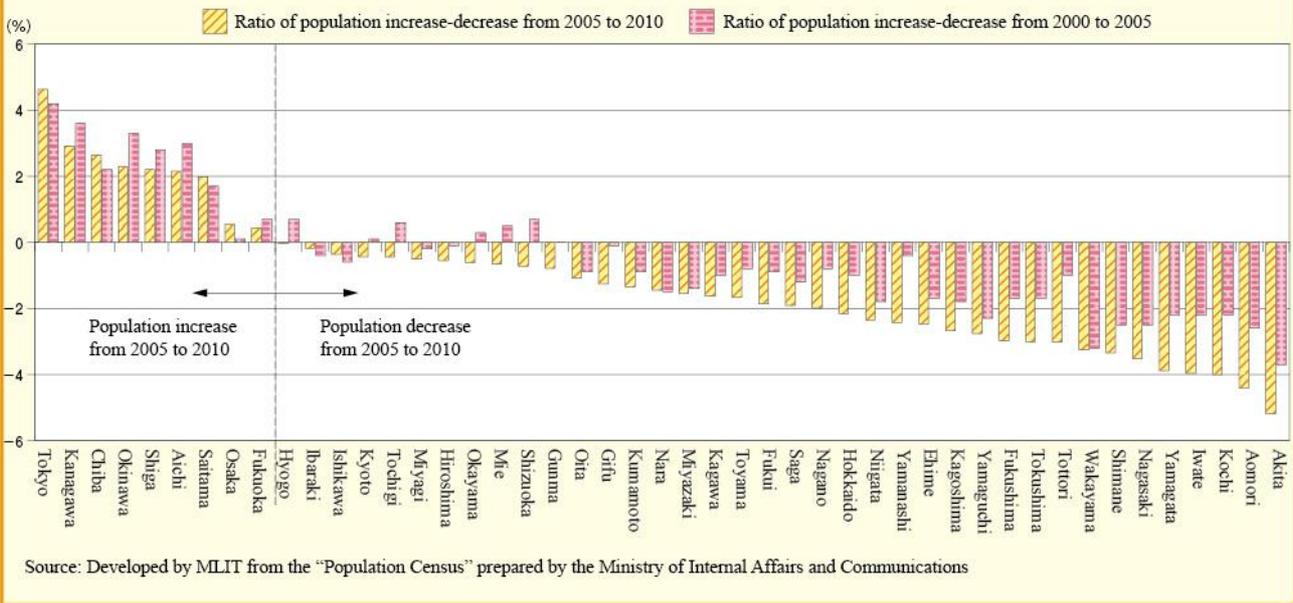


Chart. 91 International Comparison of the Elderly Ratio

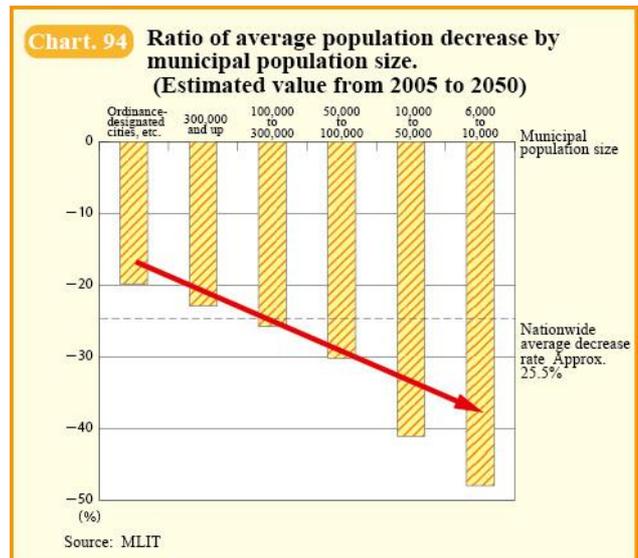
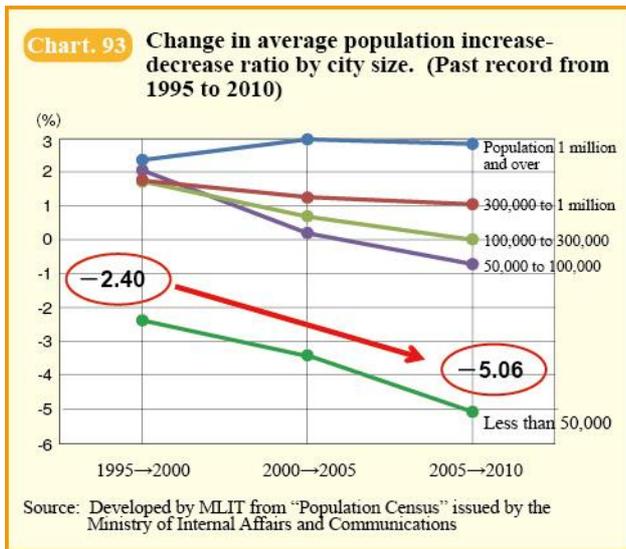


Looking at the ratio of population increase by prefecture for the most recent 5 years from 2005 to 2010, prefectures whose population increased was only 9, decreasing from 15 during the second most recent 5 years from 2000 to 2005. Also, in prefectures whose population decreased during the most recent 5 years, the rate of decline is increasing, compared to the ratio of decline during the previous 5 years. It can be said that the total population of Japan is falling, while gaps between regions tend to increase.

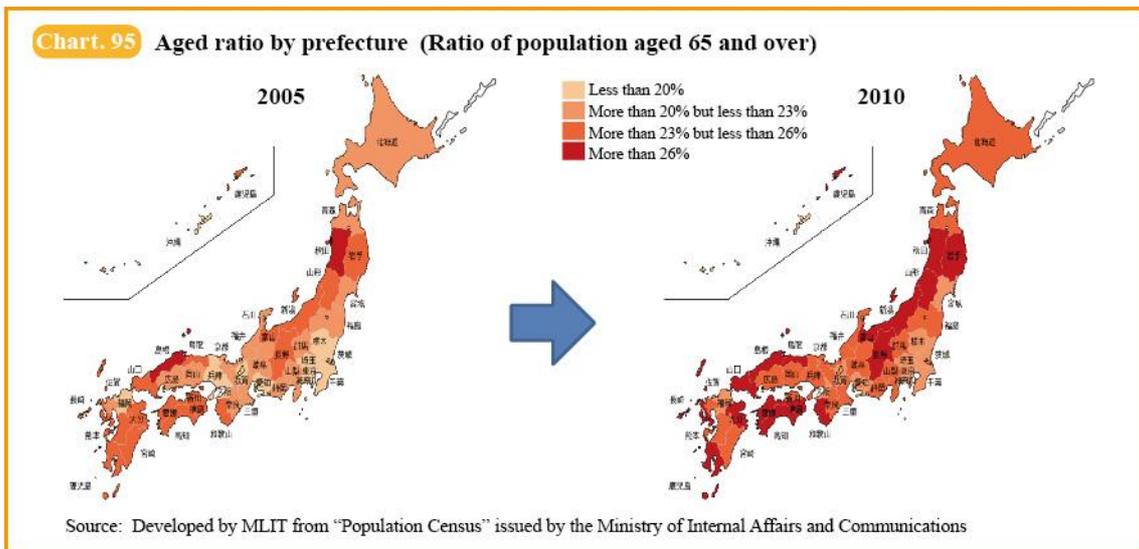
Chart. 92 Ratio of population increase by prefecture



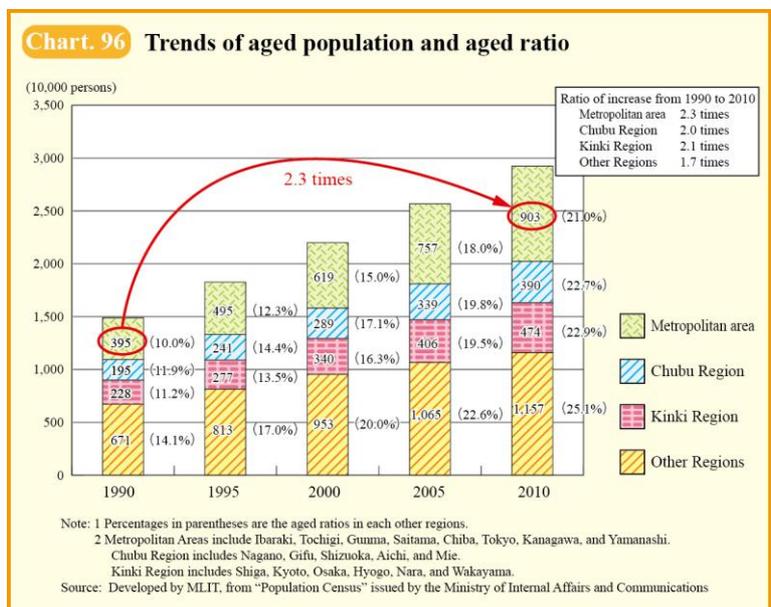
Looking at the average ratio of population increase-decrease from 1995 to 2010 by size of municipality, municipalities with populations of more than 100,000 but less than 300,000 are maintaining the size of their populations on average. However, in municipalities with populations of less than 100,000, the size of population tends to decrease on average, and for municipalities with populations less than 50,000, the reduction tends to increase, showing a decrease of about 5% during the most recent 5 years (from 2005 to 2010). In addition, a long-term prediction from 2005 to 2050 indicates that the smaller the size of population is, the higher the rate of population decline will become. In municipalities whose populations are less than 50,000, it is predicted the population will decrease by 40% compared to 2005.



Looking at changes in the aged ratio of 2005 and 2010 by prefecture, the aged ratio in regional areas tends to increase, compared to large metropolitan areas. Prefectures where the aging ratio is high, in the order, are Akita (29.6%), Shimane (29.1%), and Kochi (28.8%). On the other hand, the ratios of central prefectures in the three major metropolitan areas are Tokyo (20.4%), Osaka (22.4%), and Aichi (20.3%).

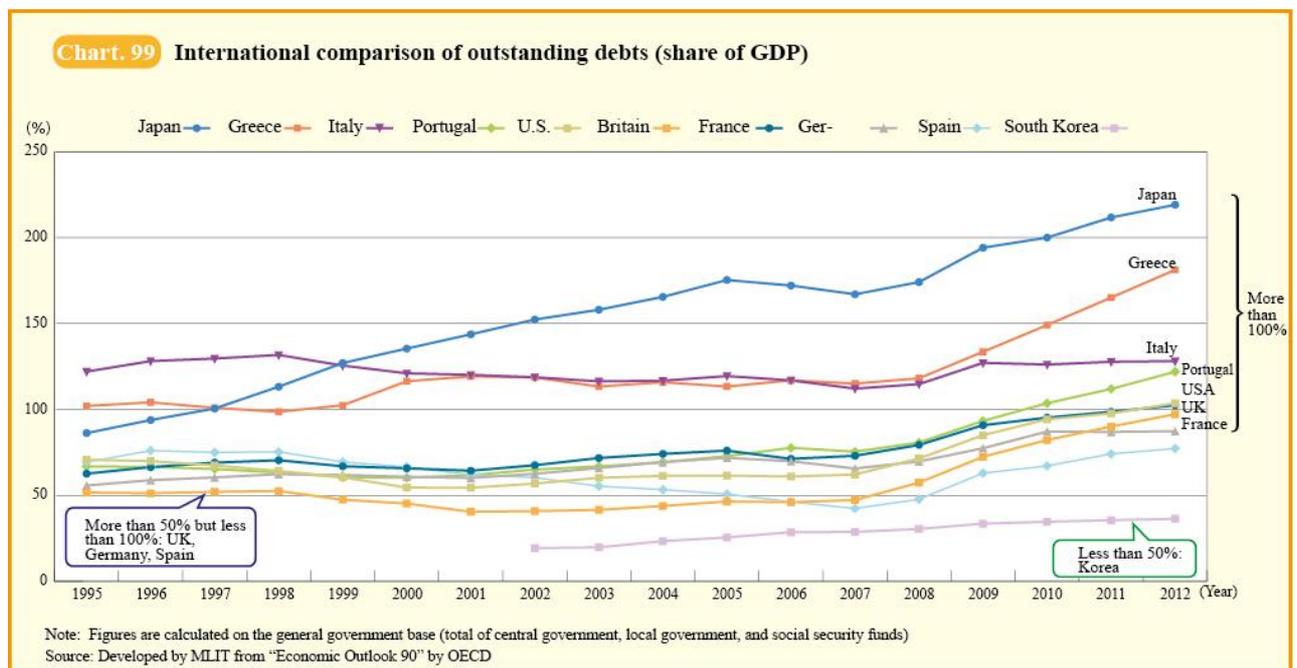
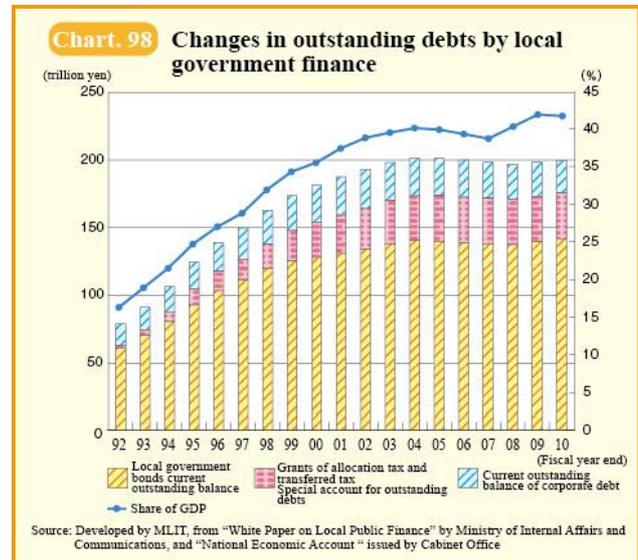
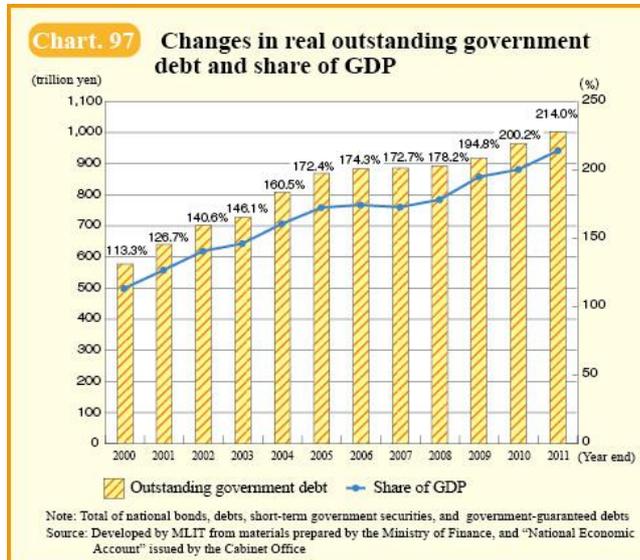


However, the increase rate of population aging itself is larger in large metropolitan areas than in regional areas. Comparing the aged population in 2010 with that in 1990 shows an increase of 1.7 times in regional areas, and 2.3 times in metropolitan areas. Looking at the most recent 5 years (5 years from 2005 to 2010), an increase of approximately 0.92 million in the aged population was observed in regional areas, and an increase of approximately 1.46 million in metropolitan areas. It can be said that responding to the aging society is not only an issue for regional areas but also a challenge for large cities.



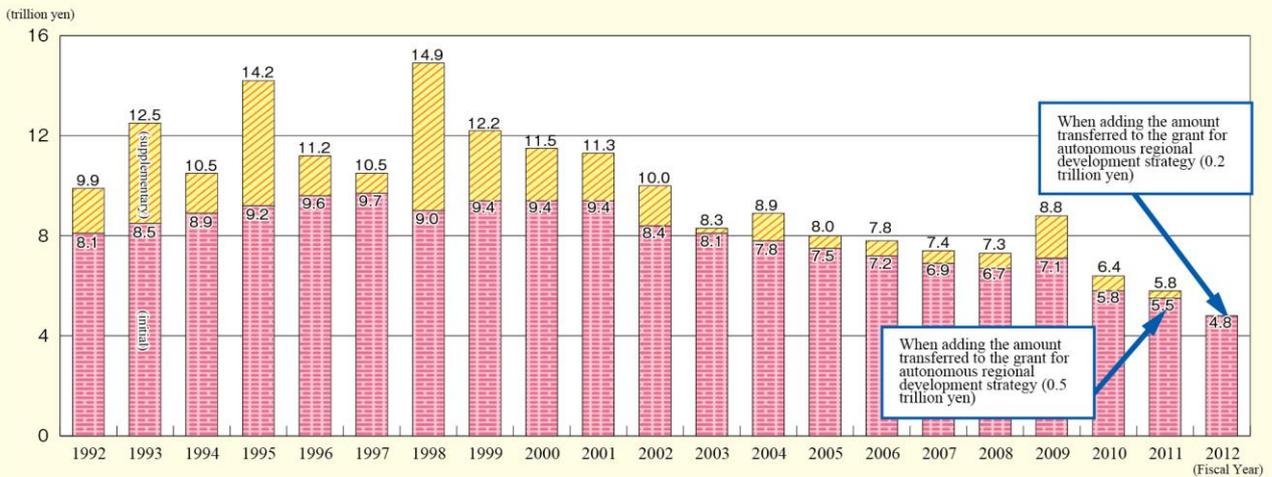
2 Financial restrictions

Looking at Japan's outstanding debts, the social security expenses have been largely increasing in correlation with the falling birthrate and aging population, and real outstanding government debt as of the end of December 2011 is 1,002 trillion yen, accounting for 214.0% of the GDP, giving rise more severe financial restrictions. As for local government finance, outstanding debts are about 200 trillion yen, which has been the same level in recent years. Furthermore, looking from an international level, outstanding debts by the central and local governments accounts for 219.1% of the GDP, staying in the worst level among major developed countries, which is higher than those of countries experiencing debt crisis problems including Greece and Italy.



Under these circumstances, public works expenditures have been on a decreasing trend for a long-period of time. Looking back at the changes during the past 20 years, the expenditures have decreased by about half compared to the peak (FY1997) on the initial budget basis, and by about one-third compared to the peak when the supplementary budget is added (FY1998), excluding expenditures related to reconstruction after the Great East Japan Earthquake. Therefore, fiscal restrictions are big issues for the development of truly essential social infrastructure.

Chart. 100 Changes in public works spending



* In 2009, "amount equivalent to special grants for local road improvement" (0.7 trillion yen) that has been accounted into special accounts in FY2008 was switched to general accounts. For this reason, the apparent value looks increasing from the previous fiscal year (+5.0%), but the actual value is -4.5%, when excluding this special factor.

* Expenditures for recovery and reconstruction related to the Great East Japan Earthquake are excluded from the amount of the supplementary budget of FY2011.

* The FY2011's first and third supplementary budgets and the FY2012's initial budget include a public works-related budget for recovery and reconstruction related to the Great East Japan Earthquake and national disaster prevention, and the amounts are as follows:
 Supplementary budgets until FY2011's third budget are based on general accounting, and FY2012's initial budget is based on special-account spending on reconstruction. In addition to this, there is a Subsidy for Recovery from the Great East Japan Earthquake.

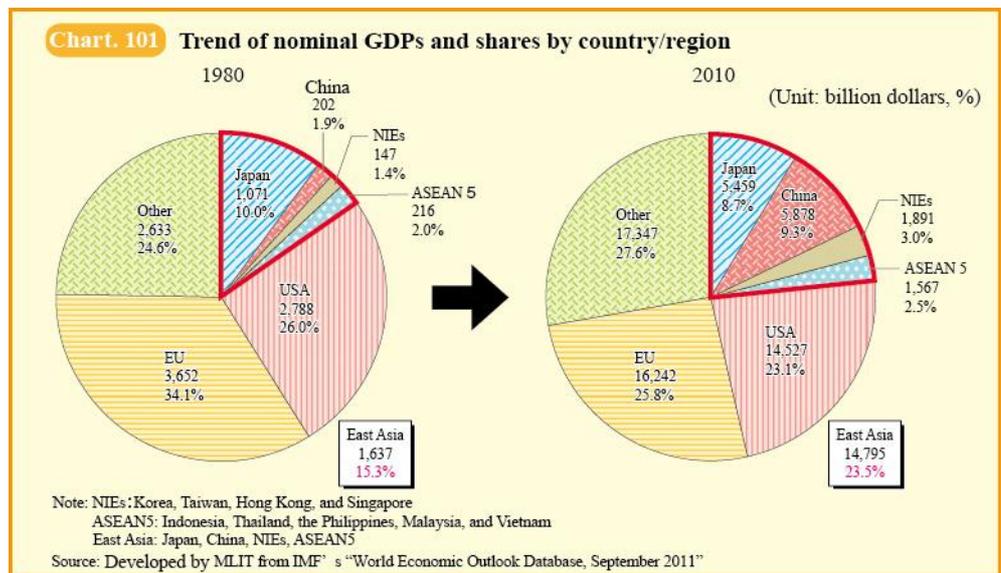
[Expenditures for the recovery and reconstruction related to the Great East Japan Earthquake]				(Unit: trillion yen)
	FY2011 First Supplementary	FY2011 Third Supplementary	FY2012 Initial	Cumulative total
Recovery	1.1	0.9	0.2	2.2
Reconstruction	0.1	0.2	0.2	0.5
National disaster prevention	—	0.2	0.3	0.5
Total	1.2	1.3	0.7	3.3

Note: Since values are rounded, the total may not occasionally match.
 Source: Developed by MLIT from materials prepared by Ministry of Finance

3 Intensifying international competition

The East Asian area where rapid economic growth is taking place is having a great effect on the development of Japan's industry base and overall economy, as well as being a great factor when we consider the future of regions in Japan.

The share of nominal GDPs of the East Asia area compared to the entire world was 15.3% in 1980, and this increased to 23.5% (approx. 1.5 times) in 2010. Especially, the growth is



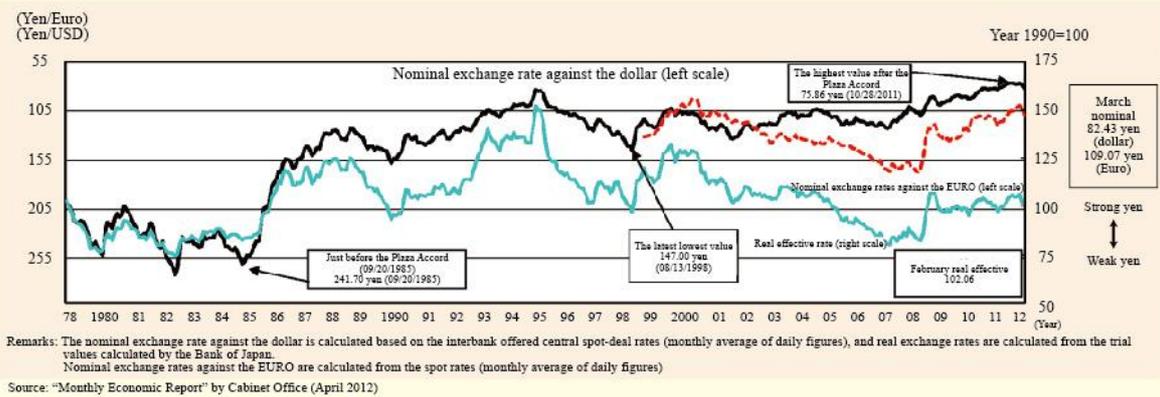
Note: NIEs: Korea, Taiwan, Hong Kong, and Singapore
 ASEAN5: Indonesia, Thailand, the Philippines, Malaysia, and Vietnam
 East Asia: Japan, China, NIEs, ASEAN5

Source: Developed by MLIT from IMF's "World Economic Outlook Database, September 2011"

remarkable in China, where 5,878.3 billion dollars of GDP was recorded in 2010, which is the second highest in the world, exceeding Japan's 5,458.8 billion dollars.

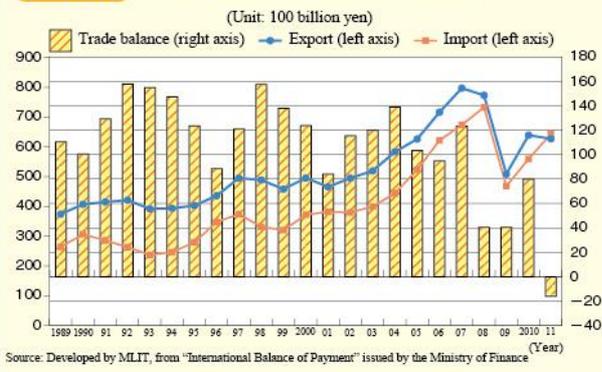
Meanwhile, in October 2011, the exchange rate of the yen temporarily rose to 75.86 yen against the dollar and marked the highest value after the Plaza Accord. Demands in emerging Asian countries and record-breaking constant strong yen have contributed to an increase in foreign investment. Accompanying this, in the same year, Japan's trade balance ended in the red (-1,608.9 billion yen) for the first time since 1963. It is estimated that an increase in imports due to the price hike of fossil fuels, etc., and a decrease in exports due to the Earthquake and slow overseas economies, etc.

Chart. 102 Trend of exchange rates



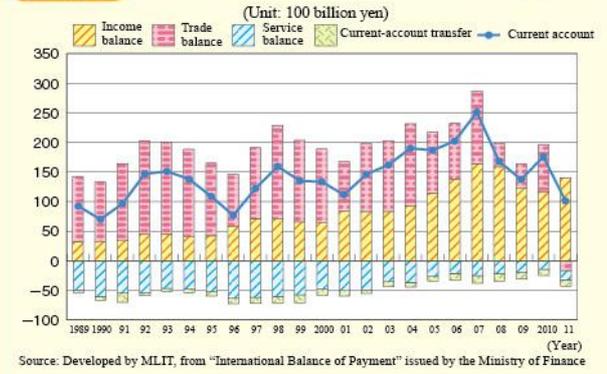
Remarks: The nominal exchange rate against the dollar is calculated based on the interbank offered central spot-deal rates (monthly average of daily figures), and real exchange rates are calculated from the trial values calculated by the Bank of Japan.
Nominal exchange rates against the EURO are calculated from the spot rates (monthly average of daily figures)
Source: "Monthly Economic Report" by Cabinet Office (April 2012)

Chart. 103 Change in Japan's trade balance



Source: Developed by MLIT, from "International Balance of Payment" issued by the Ministry of Finance

Chart. 104 Trend in Japan's international balance of payments



Source: Developed by MLIT, from "International Balance of Payment" issued by the Ministry of Finance

(Infrastructures capable of supporting international competitiveness)

In order to strengthen Japan's international competitiveness vis-à-vis intensifying international competition in the global economy, it is necessary to improve industrial locations and working/living environments with the arrangement of industrial/urban infrastructures, as well as to strengthen transportation/logistics services with well-established transport networks. In regard to conditions for developing infrastructures for improving Japan's international competitiveness, Japan was ranked 15th by the World Economic Forum^{Note} in the 2011 Infrastructure Division ranking by country. On the whole, Western countries are evaluated higher, countries such as the U.S. and France are showing a drop in the past 4 years, and Asian countries and regions including Hong Kong, Singapore, and South Korea are earning good evaluations. With the movement toward infrastructure improvement, Japan's declining international presence is a concern.

Specifically, the trend in container handling amounts at ports shows that Japan's international competitiveness is declining due to the advance of China, Singapore, Hong Kong, and South Korea. The Kobe Port ranked 4th in the world in 1980 in container handling amount, but it dropped outside of 50th ranking in 2010 (quick report value).

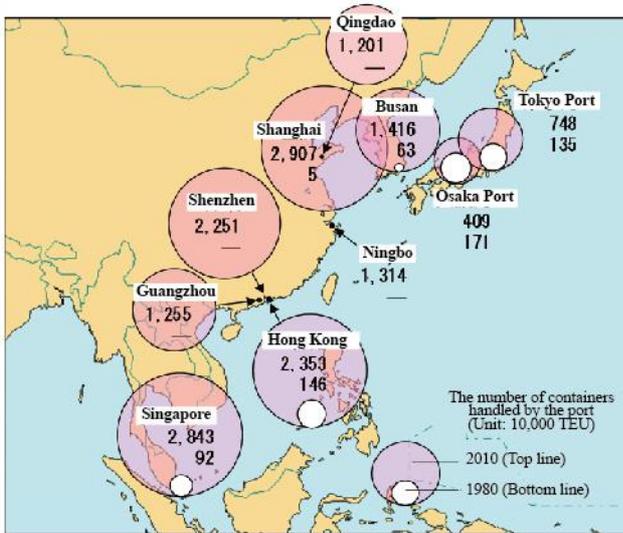
Chart. 105 International competitiveness ranking by country (Infrastructure division)

	2011	2010	2009	2008
1st	Hong Kong	Hong Kong	Germany	Germany
2nd	Germany	Germany	Hong Kong	France
3rd	Singapore	United Arab Emirates	France	Switzerland
4th	France	France	Singapore	Singapore
5th	Switzerland	Singapore	Switzerland	Hong Kong
6th	UK	Switzerland	United Arab Emirates	Canada
7th	Netherlands	Netherlands	Canada	USA
8th	United Arab Emirates	UK	USA	Denmark
9th	Korea	Canada	Austria	Finland
10th	Denmark	Sweden	Finland	Austria
	(15th) Japan	(11th) Japan	(13th) Japan	(11th) Japan

Source: Developed by MLIT from "The Global Competitiveness Report" by World Economic Forum

Note : The World Economic Forum is an independent international organization (a non-profit organization established in 1971 based in Geneva, Switzerland) committed to improving the state of the world by engaging business, political, academic and other leaders of society to shape global, regional, and industry agendas.

Chart. 106 Port handling amount



* Tokyo Port refers to the Tokyo port and Yokohama port
Osaka Port refers to the Osaka port and Kobe port.
However, figures for Osaka port are as of 2009.

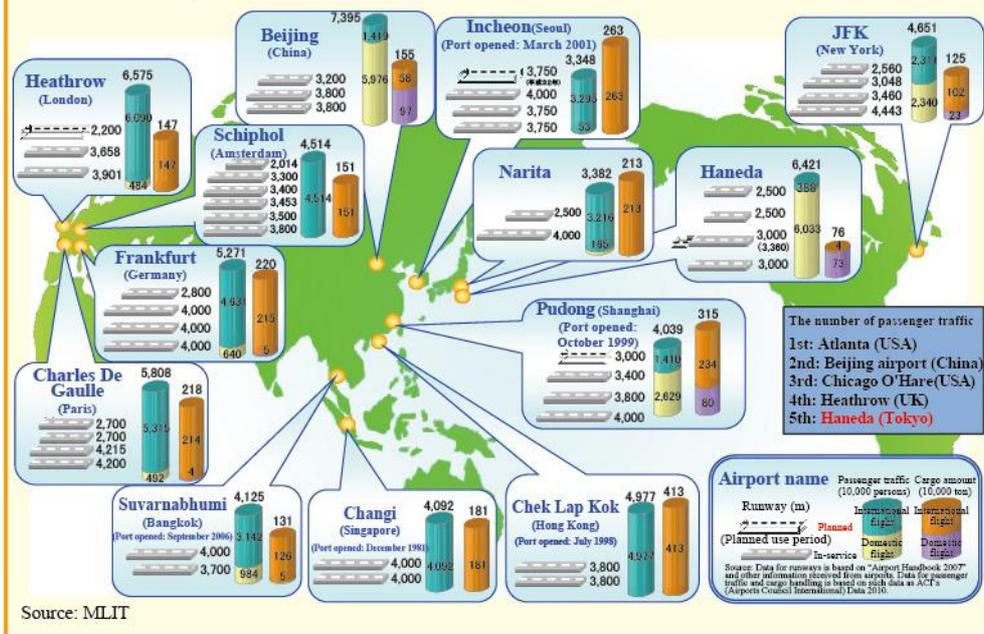
1980			2010 (quick report)		
Rank	Port name	Handling amount	Rank	Port name	Handling amount
1	New York/New Jersey	195	1 (2)	Shanghai	2,907
2	Rotterdam	190	2 (1)	Singapore	2,843
3	Hong Kong	146	3 (3)	Hong Kong	2,353
4	Kobe	146	4 (4)	Shenzhen	2,251
5	Kaohsiung	98	5 (5)	Busan	1,416
6	Singapore	92	6 (8)	Ningbo	1,314
7	San Juan	85	7 (6)	Guangzhou	1,255
8	Long Beach	82	8 (9)	Qingdao	1,201
9	Hamburg	78	9 (7)	Dubai	1,100
10	Oakland	78	10 (10)	Rotterdam	1,115
13	Yokohama	72	27(25)	Tokyo	420
16	Busan	63	38(38)	Yokohama	328
18	Tokyo	63	[The following ports are ranked below the top 50, so the ranks of 2010 are unknown]		
39	Osaka	25	-(46)	Kobe	※225
46	Nagoya	21	-(51)	Nagoya	※211
			-(56)	Osaka	※184

Source: Developed by MLIT from "Containerisation International Yearbook 1982, 2011 March 2011, Containerisation International"

As for airports, the passenger traffic in Haneda Airport ranks 5th in the world, but South Korea (Incheon), China (Pudong), and Hong Kong (Chek Lap Kok) exceed Narita Airport in terms of cargo volume.

Amongst in the rapidly-growing East Asian countries, looking from the viewpoint of capturing the rapidly-expanding demand in the East Asia area in the future, it will be key to activate international business and tourist exchange, to develop exchange networks, and to improve the competitive power of cities. It is necessary to promote the development of infrastructures to strengthen global competition.

Chart. 107 Maintenance, passenger traffic, cargo handling at airports in the world's major countries



Source: MLIT

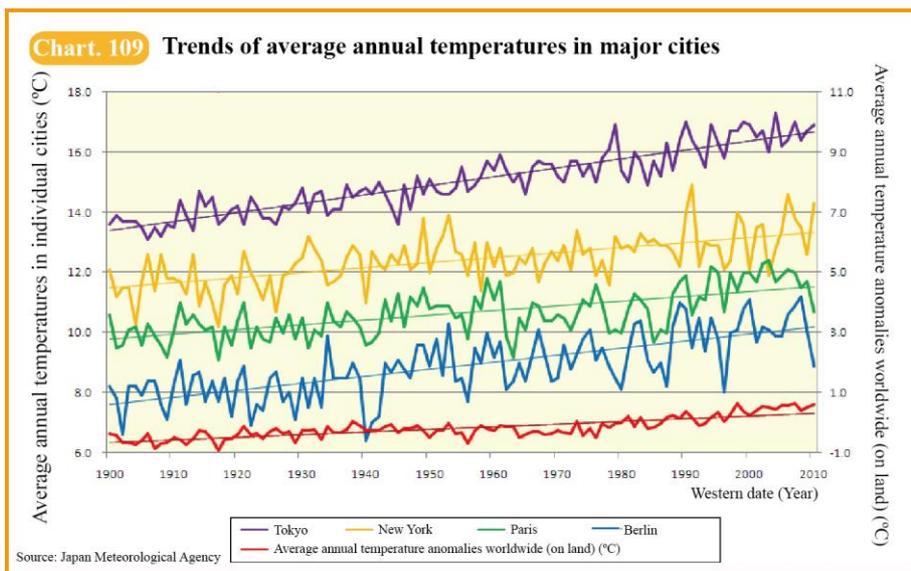
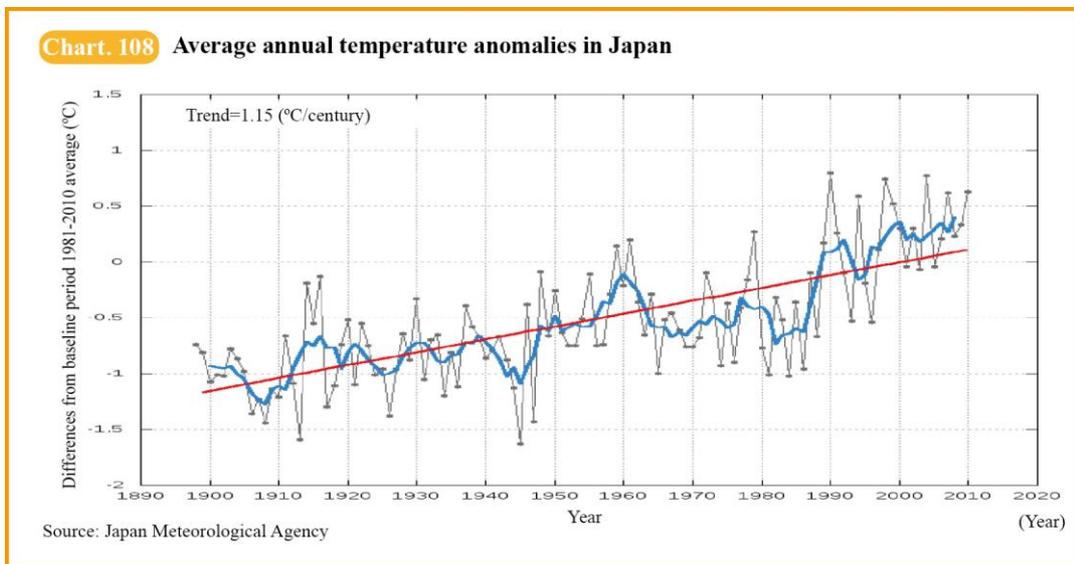
4 A country vulnerable to global warming and climate change

To manage our national land and regions in a sustainable manner, the vulnerability of the national land to climate change in accordance with global warming presents a serious challenge, in addition to the aforementioned socioeconomic restraining factors including declining population, aging society, financial restrictions, and intensifying international competition.

(Present state of global warming)

According to the Fourth Assessment Report 2007 issued by “the Intergovernmental Panel on Climate Change (IPCC)” of the United Nations, the amount of artificial emissions of greenhouse gases into the atmosphere (2000-2005) was approximately 7,200 million tons of CO₂/year, which is more than double the approximately 3,100 million tons of CO₂/year by natural absorption. The concentration of CO₂ in the atmosphere in 2005 was 379 ppm [Note 1](#)), increasing at the rate of 1.9 ppm per year (average from 1995 to 2005). The same is true of the CO₂ concentration in our country, as the concentration of CO₂ in the atmosphere exceeded 400 ppm (average monthly value) in 2012 at an observation point set by the Japan Meteorological Agency, for the first time since the start of observation in 1987. [Note 2](#))

With regard to the effect on climate change caused by increasing greenhouse gas concentration, an analysis by the Japan Meteorological Agency shows the average annual world temperature is increasing by approximately 0.68°C per century. In Japan, the degree of increase is higher than the global average, showing an increase of about 1.15°C. In particular, an increase of about 3°C has been recorded in Tokyo, partly influenced by the heat island phenomenon [Note 3](#)).



[Note1](#): “ppm” (parts per million) is the ratio of the number of greenhouse gas molecules to the total number of molecules of dry air.

[Note2](#): In Ryori, Ofunato-city, Iwate-prefecture, the average monthly values in March 2012 and April 2012 were recorded as 401.2 ppm and 402.2ppm (both are quick report values), respectively.

[Note3](#): The “Heat island phenomenon” means that the temperature of the atmosphere at the urban center becomes higher than that of its surrounding non-urban areas like an island.

(Increasing “extreme weather events”)

The IPCC Fourth Assessment Report says, “Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level,” and furthermore, it points out, “It is very likely that hot extremes, heat waves and heavy precipitation events will continue to become more frequent,” and “it is likely that future tropical cyclones (typhoons and hurricanes) will become more intense, with higher peak wind speeds and heavier precipitation.”

The “Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation,” which was agreed to and accepted by the IPCC in the 34th Session of the IPCC held in November 2011 indicates that climate changes associated with global warming may have caused an increase in the number of warm days/nights, a decrease in the number of cold days/nights, an increase in the intensity of heavy rainfall, an increase in the number of extreme coastal high water incidents related to increases in the mean sea level, and changes in tropical cyclone activity (i.e., intensity, frequency, duration), as well as predicting a dramatic increase in extreme weather events by the end of the 21st century using meteorological forecast models. Especially in the East Asian area, the report indicates that to present a 1-in-20 year extreme daily maximum temperature event is likely to become a 1-in-2 to 5 year event during the period of

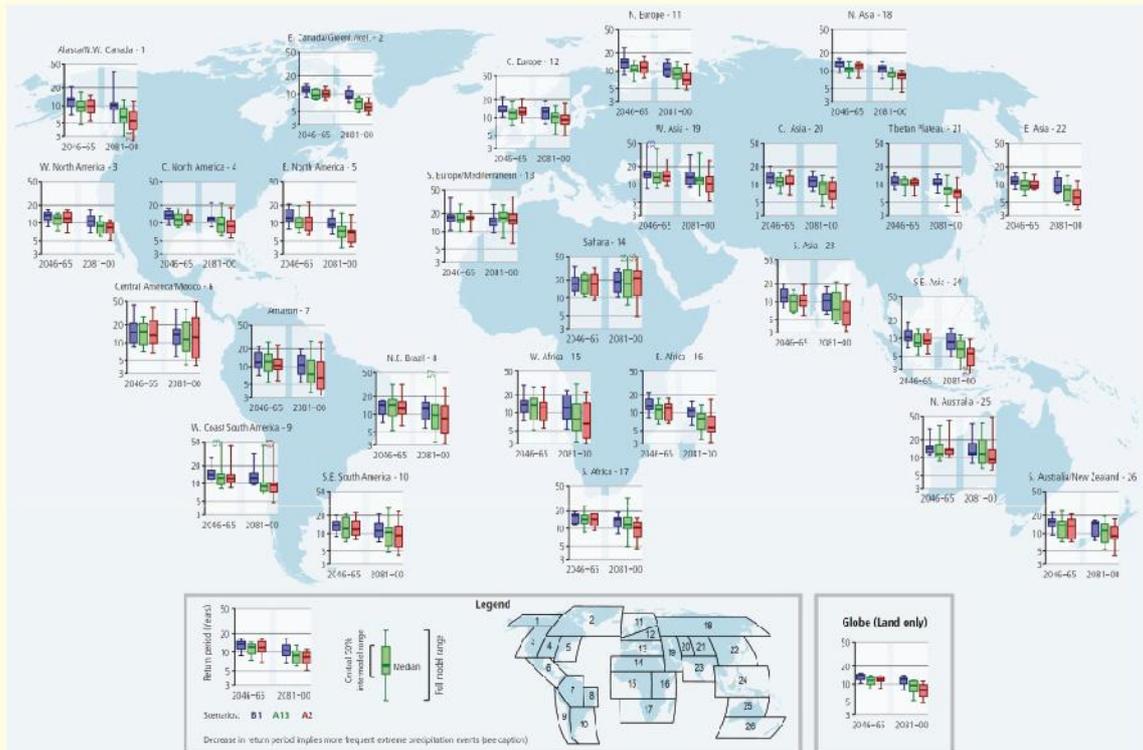
Chart. 110 Major disasters in the world since 2005

Year	Disaster	Country	Number of dead or missing
2005	Flood/landslide	India	1,503
2005	Hurricane	USA	5,336
2005	Rainstorm	India, Bangladesh	4,049
2005	Hurricane/flood	Guatemala, El Salvador, Mexico, Costa Rica, Nicaragua	1,597
2005	Earthquake	Pakistan, India, Afghanistan	74,651
2006	Cold wave	Russia, eastern Europe	1,000 or more
2006	Landslide	Philippines	1,122
2006	Earthquake/volcanic eruption	Indonesia	5,778
2006	Typhoon	Southeast area of China	1,400 or more
2006	Heat wave	Central Europe	2,000 or more
2006	Typhoon	Philippines	1,496
2007	Heavy rainfall, flood	India	1,752
2007	Flood, landslide	Bangladesh	1,152
2007	Cyclone	Bangladesh	4,234
2008	Cyclone	Myanmar	130,000 or more
2008	Earthquake	China, Sichuan	69,227
2008	Heavy rainfall	India, Pakistan, Nepal	2,700 or more
2009	Earthquake/tsunami	Indonesia, Sumatra	1,117 or more
2010	Earthquake/tsunami	Haiti	222,570
2010	Earthquake	China, Qingdao	2,220 or more
2010	Heavy rainfall, flood	Pakistan	1,960 or more
2010	Heavy rainfall, mudslide	China, Gansu	1,760 or more
2011	Earthquake/tsunami	Japan, East Japan	18,870

Note: 1 Disasters with 1,000 or more dead or missing are listed.
 2 Data for the Great East Japan Earthquake is as of April 4, 2012.
 Source: Developed by MLIT from “White Paper on Disaster Management 2008” issued by Cabinet Office, Government of Japan, “White Paper on Disaster Management 2008,” “White Paper on Disaster Management 2010,” and “Chronological Scientific Tables”

Chart. 111 Projected return periods for daily precipitation events that have occurred only once during the past 20-year period (Year)

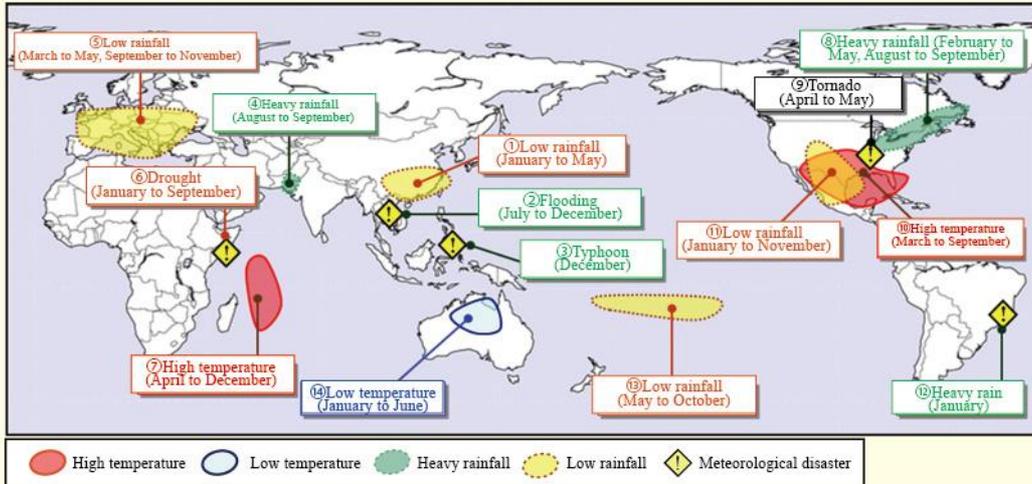
Projected return periods for two time horizons, 2046 - 2065 and 2081 - 2100, as compared to a daily precipitation event that happened only once in the late 20th century during the last 20-year period (1981-2000).



The emissions scenarios, B1 (blue), A1B (green) and A2 (red) are used.

Source: “Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation” by the Intergovernmental Panel on Climate Change (IPCC)

Chart. 112 Distribution map of major abnormal weather/meteorological disasters in the world (2011)



Source: Japan Meteorological Agency

2046-2065, and a 1-in-1 to 3 year event during the period of 2081-2100, and that at present a 1-in-20 year extreme daily precipitation event is likely to become a 1-in-7 to 12 year event during the period of 2046-2065, and a 1-in-5 to 10 year event during the period of 2081-2100.

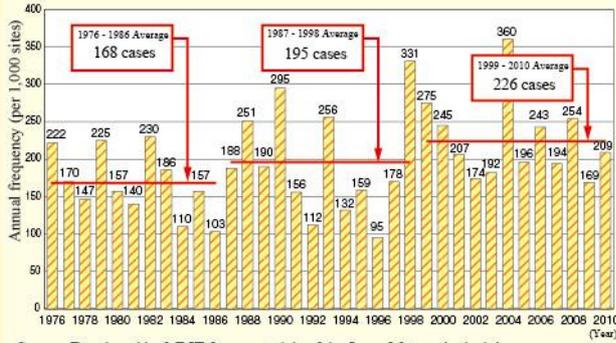
As seen above, ongoing global warming is expected to change the frequency of extreme weather event occurrences, with fear that abnormal weather and meteorological disasters may occur at a higher level.

Looking at the worldwide situation, major abnormal weather and meteorological disasters that occurred in 2011 are shown in the figures at right. The flood that occurred in the Chao Phraya River valley in Thailand may still be fresh in our memories.

Looking at the situation in Japan, the frequency of heavy rainfall exceeding 50mm per hour tends to increase (about 1.3 times in 30 years) in the long term, and similarly, the frequency of heavy rainfall exceeding 100mm per hour also tends to increase.

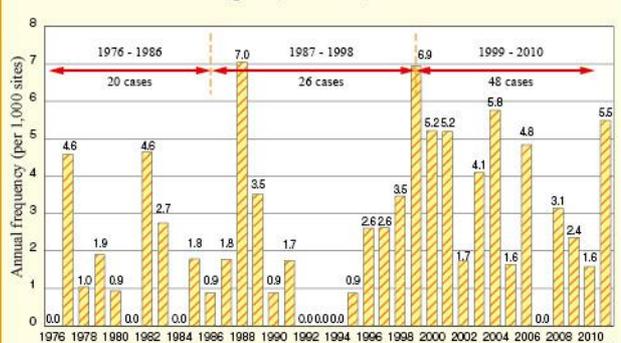
Furthermore, the average annual frequency of landslide disasters has increased nearly 1.3 times during the last 30 years.

Chart. 113 Annual frequency of hourly precipitation exceeding 50 mm (per 1,000 sites)



Source: Developed by MLIT from materials of the Japan Meteorological Agency

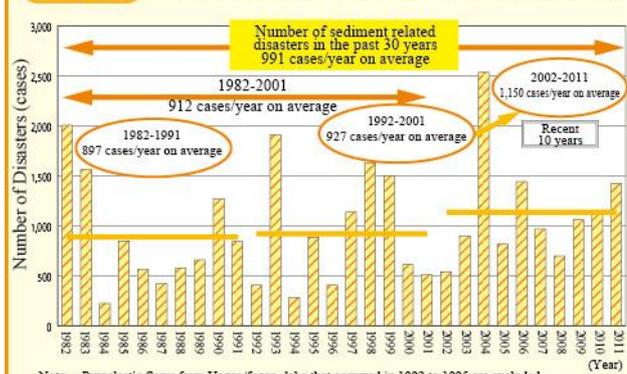
Chart. 114 Annual frequency of hourly precipitation exceeding 100 mm (per 1,000 sites)



Source: Developed by MLIT from materials of the Japan Meteorological Agency

With regard to typhoons, it is still fresh in our memories when Typhoon Talas (the 12th named storm) generated on August 25, 2011, hit Japan. The Large Typhoon Talas formed as a tropical depression over the sea west of the Mariana Islands, and it moved slowly northward and developed into a typhoon. Around 10 o'clock on September 3, Talas made landfall on the east of Kochi-prefecture, and even after that it moved slowly northward. It caused record-breaking heavy rainfall over a wide area from western to northern Japan, especially along the mountains. Particularly over a wide area of the Kii Peninsula, the total amount of precipitation from 17:00 August 30 to 24:00 September 5 exceeded 1,000 mm. The observing station at Kamikitayama-village in Nara Prefecture observed 1,652.5 mm of rainfall in 72 hours, and it broke the record of 1,322 mm of

Chart. 115 Changes in the number of sediment related disasters



Note: Pyroclastic flows from Unzen-fugen-dake that occurred in 1992 to 1995 are excluded. The number of mudslides and landslides of 1982 is an estimated value.

Source: MLIT

rainfall that fell on Mikado, Misato-cho in Miyazaki Prefecture, which was the highest rainfall until then. The total amount of precipitation at the station reached 1,814.5 mm and the precipitation amount in some areas was estimated to be over 2,000 mm based on Radar/Rain Gauge Analyzed Precipitation. The typhoon Talas triggered landslide disasters, submersions, river floods, etc., and thus left 78 people dead and 16 missing in some prefectures such as Wakayama, Nara, and Mie. Furthermore, multiple occurrences of deep-seated landslides^{Note1} caused serious damage, and 17 river channel blockages^{Note2} were formed due to large-scale slope failures. Among them, 5 places threatened to become serious secondary disasters from the collapse of river channel blockages caused by subsequent rainfall. In addition, Typhoon Roke (the 15th named storm) occurred on September 13 and grew into a very strong typhoon on September 20, with a central pressure of 940 hPa and maximum wind speed of 45 m/second. After the typhoon made land on or around Hamamatsu-city in Shizuoka Prefecture on September 21, it made its way through the Tokai Region, Kanto Region, and then the Tohoku Region while maintaining its strength and causing wind storms and record-breaking heavy rain in a wide area from West Japan to North Japan. Violent winds were observed in various places and maximum wind speed of 30.5 m/second was recorded at Rinkai-cho, Edogawa-ku, Tokyo, which was the all-time highest record since observations began. Moreover, of the observation points with a statistics period of at least 10 years, 36 points set new records for 72-hour maximum precipitation since the observation started, and maximum wind speed records were also set for 20 points. Typhoon Roke left 18 people dead and 1 missing in prefectures such as Miyagi, Shizuoka, and Aichi, and cause residential damage, landslides, floods, and other problems over a wide area from Okinawa to Hokkaido.

(Difficult journey to a low carbon society)

With regard to reduction of greenhouse gases that cause global warming, the Kyoto Protocol, which defined numeric targets for emission reductions by developed countries and countries with economies in transition were adopted (effective in 2005) in the third session of the Conference of the Parties (COP3) of the United Nations Framework Convention on Climate Change held in 1997. In this Protocol, a reduction of at least 5% compared to the base year (1990, in principle) in 5 years from 2008 to 2012 was set as a target for developed countries overall, and a reduction of 6% was set as a target for Japan.

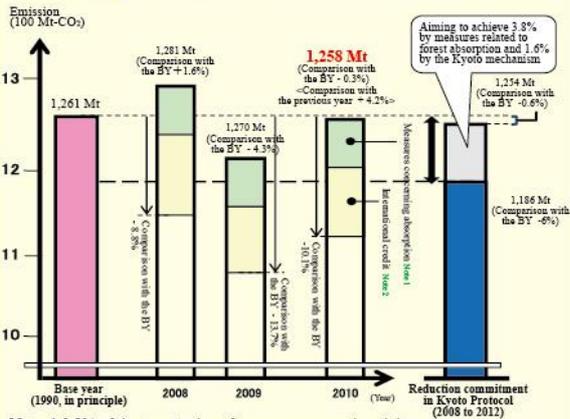
In the 17th session of the Conference of the Parties (COP17) of the United Nations Framework Convention on Climate Change held in December 2011 at Durban in South Africa, the “Durban Agreement” was adopted and called for the mandatory greenhouse gas emission reductions defined in the Kyoto Protocol to be continued after 2013 and also defined a new framework with participation of all countries including United States and China in 2020. Although Japan did not secede from the Protocol itself, it was decided that Japan would not to take part in the extended reduction obligation, and would continue to address the issue independently, assuming the obligation of reporting the amount of reduction, etc. The Ministry of Land, Infrastructure, Transport and Tourism is required to promote energy saving and the use of renewable energy so that Japan can aggressively contribute to the international cooperation in the field of climate change.

On the other hand, Japan’s recent greenhouse gas emissions show the following figures for 2010; +4.2% compared with the previous fiscal year, and -0.3% compared with the base year. If measures concerning absorption and international credit are taken into account, the amount is -10.1% compared with the base year. The Ministry of Land, Infrastructure, Transport and Tourism is involved with sectors that account for a majority of the CO₂ emissions, including the transportation, residential, and commercial, and other sectors. For the breakdown of CO₂ emissions during the same fiscal year, the emissions in the transportation sector were about 232 million tons, showing a declining tendency. But it still accounted for about 20% of the total, showing the second largest emissions after the industry sector. In addition, the emissions in the residential sector and the commercial and other sectors were 172 million tons and 217 million tons, accounting for 14.4% and 18.2% of the total, respectively.

Note1: A phenomenon of slope failures where the deep ground and top soil layer collapse monolithically. They tend to be larger landslides.

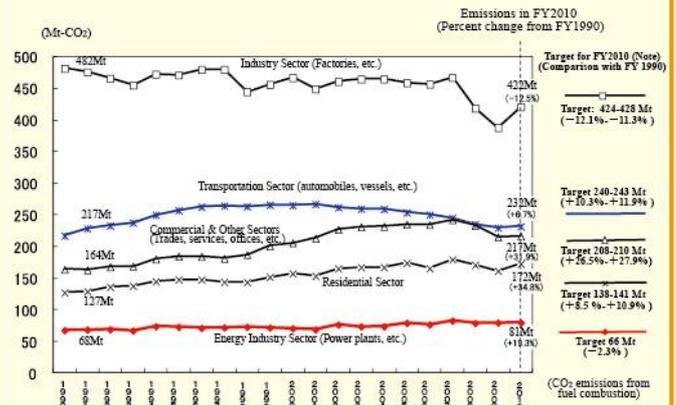
Note2: A phenomenon of collapsed slope landslides due to excessive rainfall or earthquakes that interrupt and dam streams or rivers. It is also called a “natural dam,” “landslide dam,” and so on. When the water level in the upstream rises and overflows, large-scale mudslides and flood inundation sometimes occur.

Chart. 116 Greenhouse Gas Emission Data of Japan



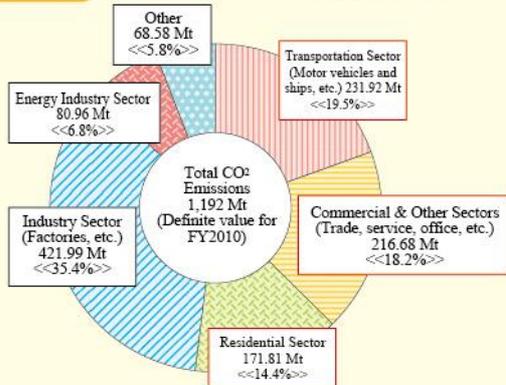
Note: 1 3.8% of the target value of measures concerning sinks
 2 Credits that the government has already acquired and credits that the private sector acquired and already moved to a government account are considered.
 Source: MLIT

Chart. 117 Changes in CO₂ emissions and target values by sector



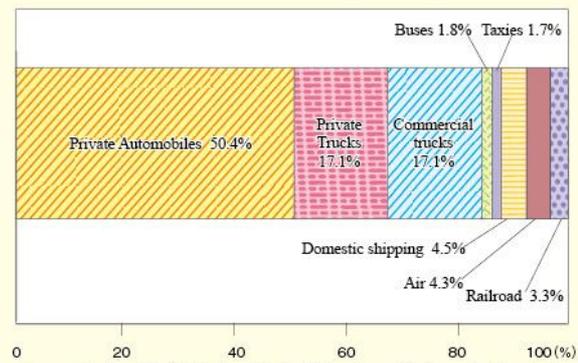
Note: Target values for FY2010 are based on the higher achievement case in the Achievement Plan of the Kyoto Protocol (Cabinet Decision on March 28, 2008)
 Source: MLIT

Chart. 118 CO₂ emissions by sector in Japan



Note: The proportions of the emissions from power generation by electric power suppliers and emissions from heat generation by heat suppliers are allocated to their final demand sectors in accordance with the respective consumption.
 Source: Developed by MLIT, from the "National Greenhouse Gas Inventory Report of Japan" issued by Greenhouse Gas Inventory Office of Japan

Chart. 119 Breakdown of CO₂ Emissions in the Transportation Sector (FY2010)



Source: Developed by MLIT, from "National Greenhouse Gas Inventory Report of Japan" issued by Greenhouse Gas Inventory Office of Japan

Many of the measures and policies developed under the Achievement Plan on the Kyoto Protocol generated successful reduction effects, but some of them were evaluated with less effective results. When working on future measures and policies, it will be critical to add proper evaluations to past measures and effects, and to refer to advanced cases in Western countries so that we can add and strengthen the necessary measures and policies. These measures will help to create employment by stimulating local economies and enhancing the competitiveness of related industries. In addition, introduction of renewable energy will contribute to establishing a self-independent distributed energy system that possesses high capabilities for disaster response.

Chart. 120 Measures against global warming for the Achievement Plan for the Kyoto Protocol, conducted by MLIT

Name of countermeasures	Emission reduction (10,000 tons-CO ₂)	
	Latest achievement Note (2) (FY2007-2010)	Target for FY2010 Note (3)
1. Measures/policies related to reduction, absorption, etc., of greenhouse gas emissions		
CO₂ emissions from fuel combustion	8,503	9,430~9,560
○ Transportation Sector	5,375	5,520~5,650
1 Promoting the use of environmentally-conscious automobiles (Greening of road haulage operations by diffusing and promoting eco-drive, etc.)	145	139
2 Measures for individual automobiles	2,252	2,470~2,550
3 Limitation of the maximum speed for large trucks on highways	85	47.1~96.8
4 Implementation of various and flexible highway toll systems	24	20+ α
5 Motor transportation demand adjustment	29	30
6 Promoting Intelligent Transport Systems (ITS) / (ETC)	22	20
7 Promoting Intelligent Transport Systems (ITS) / (VICS)	235	240
8 Reduction of road construction	65	68
9 Measures to prevent bottle-necks at railroad crossings, etc.	15	18
10 Comprehensive measures for greening the shipping trade*	132	126
11 Modal shift to railway cargo transportation *	-2	80
12 Improving the efficiency of truck transport	1,519	1,389
13 Reducing the distance of land transport for international cargo*	227	262
14 Promoting marine transport that contributes to energy saving	2	0.94
15 Promoting the utilization of public transportation	327	375
16 Improving railroad transportation energy efficiency	84	44
17 Improving aerial transportation energy efficiency	215	191
18 Realization of Environmentally Sustainable Transport (EST)	-	-
19 Promoting CO ₂ saving by cooperation between freight owners and logistics service providers	-	-
20 Promoting green management certification systems	-	-
21 Promoting and strengthening of voluntary action plans in the transportation sector (17 industries under the jurisdiction of MLIT)	-	-
○ Commercial/residential Sector	3,106	3,890
22 Improvement of energy saving functions in houses*	660	930
23 Improvement of energy saving functions in buildings	2,390	2,870
24 Promoting energy saving and new energy measures in drainage facilities, etc.*	53	90
25 Development of long-life housing	-	-
26 Promoting and strengthening of voluntary action plans in the commercial sector (6 industries under the jurisdiction of MLIT)	-	-
○ Industry Sector (Construction work field)	22	20
27 Dissemination of fuel-efficient construction machinery in the field of construction work	22	20
28 Promoting and strengthening of voluntary action plans in the industry sector (6 industries under the jurisdiction of MLIT)	-	-
○ Designing low-carbon cities and regions	0.7~3.2	0.5~2.3
29 Realizing low-carbon urban cities through the improvement of the heat environment using countermeasures for heat islands including greening activities, etc.	0.7~3.2	0.5~2.3
30 Realization of compact cities	-	-
31 Measures at the district and zone levels	-	-
32 Promoting area energy networks	-	-
Dinitrogen monoxide	76	126
33 Upgrading combustion in sewage sludge incineration facilities*	76	126
Greenhouse gas absorption measures (Note 4)	71	74
34 Promoting urban greening, etc.	71	74
2. Foundational policies		
35 Promoting studies related to climate change and strengthening observation/monitoring systems	-	-
36 Securing international links and promoting international cooperation for measures against global warming	-	-
MLIT Total	8,650	9,630~9,760

- Note: 1 Measures/policies whose field for the "Emission reduction" is marked "-" are qualitative measures/policies whose effects cannot be measured quantitatively. Emission reduction owing to promotion and strengthening of the Voluntary Action Plan is not calculated because the target year and status of counting achievement are different by industry.
2 The latest achievement refers to the latest record for each item taken from records marked in the respective fiscal years 2007 to 2010.
3 In the Achievement Plan on the Kyoto Protocol, the reduction amount averaged from FY2008 to FY2012 is set as the target value, so the values in FY2010 are set as the goal, for convenience.
4 Emission reduction regarding measures concerning absorption of greenhouse gases indicates the absorption amount.
5 Items marked "*" are measures/policies whose possibilities for achieving targets defined in the Achievement Plan on the Kyoto Protocol were evaluated as low judging from the trends in past performances.
6 Sectors managed by ministries other than MLIT are partially included.

Source: Developed by MLIT, from materials issued by Global Warming Prevention Headquarters

Column

Efforts to popularize environmentally-friendly vehicles inside and outside the country

For the purpose of realizing a low carbon dioxide society, by reducing CO₂ emissions from vehicles, various efforts have been made inside and outside the country, such as popularization of environmentally-friendly vehicles including electric vehicles.

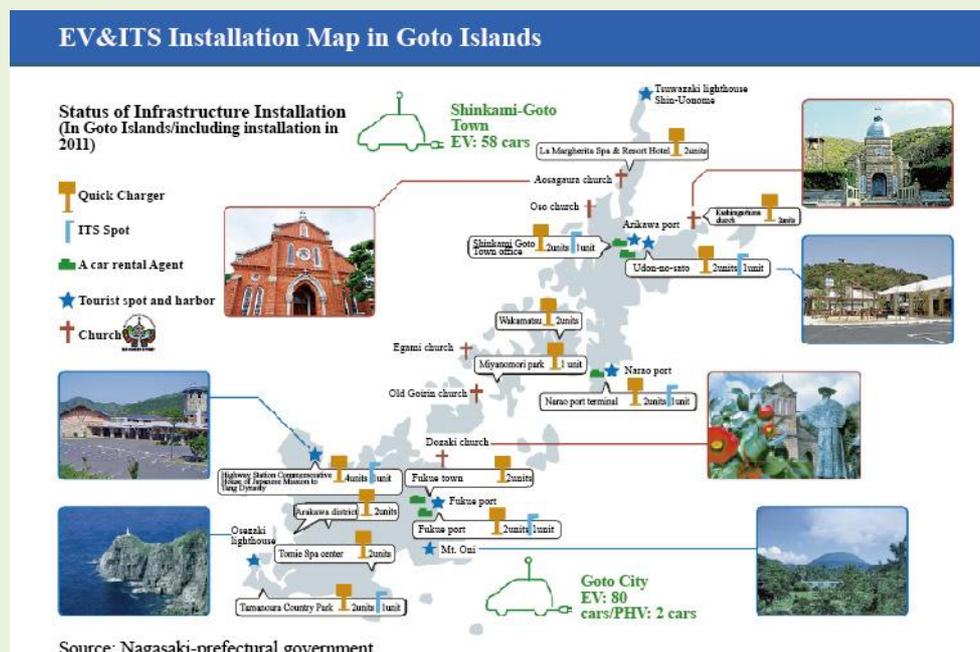
1. Efforts inside the country--A case combining the introduction of environmentally-friendly vehicles and the promotion of detached islands--

Since automobiles are an important means of transportation in detached islands, efforts combining the introduction of environmentally-friendly vehicles and the promotion of detached islands have been made.

Goto area in Nagasaki-prefecture: In 2009, Nagasaki Prefectural Government started the “Nagasaki EV&ITS Project” that aims to combine electric vehicles (EV), Plug-in hybrid vehicles (PHV), and a tourist intelligent transport system (ITS) to create a drive tourism model for the future.

While the Goto area is facing a serious decline in population and harsh employment situation, numerous tourism resources exist in the area including Christianity-related heritage sites, for which the government seeks to obtain World Heritage status. For this reason, the project aims to vitalize this area by creating employment through tourism and other related services as well as by expanding the interaction population.

Under this project, 138 EVs and 2 PHVs were introduced as rental cars in the Goto area, with charging systems installed in each spot in the area. Furthermore, ITS spots and tourist information platforms were also installed to deliver tourist information, etc., to EV rental cars. This project has been promoted based on the collaboration of industry, academia, and government, and the Ministry of Land, Infrastructure, Transport and Tourism has also been participating as a secretariat to give support.



Miyakojima city in Okinawa-prefecture: Miyakojima city was designated as one of the Environmental Model Cities by the government, and it aims to establish a recycling society through the local supply and local consumption of energy utilizing nature. The city is conducting a bioethanol verification project that manufactures bioethanol for vehicle fuel from sugarcane, taking advantage of the sugarcane industry, which is the largest industry in the city. The Miyakojima city office introduced vehicles in which E3 fuel (gasoline blended with 3% bio-ethanol) and E10 fuel (gasoline blended with 10% bio-ethanol) are used. In addition, to popularize these fuels, it built a fuel factory and gas stations as well as arranging a transport function using special-purpose tank trucks. Although authorization by the national government is required to use E10 fuel in vehicles, 25 vehicles approved by the Minister of Land, Infrastructure and Transport have been introduced for the verification test.

A vehicle using E10 fuel



Source: MLIT

A gas station exclusively for E3/E10 fuels.



2. Efforts outside the country--Electric Vehicle Delivery Plan for London--

In London, efforts to popularize electric vehicles have been taken under the leadership of the mayor. In May 2009 the Mayor of London, Boris Johnson, revealed 'An Electric Vehicle Delivery Plan for London' to situate London as the center of EVs in Europe. In the plan, by 2015, 25,000 charging stands are to be installed throughout the London area to introduce 100,000 EVs. The city is planning to install charging stands at 500 points on streets, 2,000 points in public parking spaces, and the remaining 22,500 points in company parking places, commercial establishments, etc., in cooperation with the companies.



Source: London city

To realize the plan, the city started to arrange a charging network called 'Source London' and a member system to use the network. To secure an environment for easy charging of EVs, 1,300 public charging stands are to be installed by 2013. The number of charging points will exceed that of gas stations. When EV users register in the "Source London" system and pay the annual membership fee (100 pounds), the users can charge their cars from any charging stand offered by Source London. In addition to these, some preferential treatment policies for EV users have been started, including exemption from the congestion charge when driving in the center of London.

Column

Environmental City Overseas --Stockholm City Hammarby Sjostad--

Hammarby Sjostad in Stockholm, the capital of Sweden, is a residential area located in the south of the center of Stockholm city (occupies about 200 hectares of land, and about 26,000 inhabitants are planned). An environmentally-conscious large-scale urban development project has been promoted since the beginning of the 1990s to establish an advanced environmental city that halves environmental impacts in comparison with other similar-size cities.

Goals for the Hammarby District:

Overall goal	The overall goal is that the environmental impact including CO ₂ caused by emissions from Hammarby will be 50% lower than the corresponding level for housing areas of the early 1990s.
Transport & mobility	80% of traveling of inhabitants and commuters will be by public transport, on foot, or bicycles.
Energy	50% of the energy needed in the district will be generated from waste and sewage utilization.
Water and sewerage	<ul style="list-style-type: none"> • 100 liters of water consumption per person per day (consumption in Stockholm city is 200 liters per day) *At present, reduced to about 150 liters • Reduce the percentage of harmful substance in sewage by 50%, and collect out 95% of the phosphorus in wastewater to reuse on agricultural land.



Source: Stockholm City

In this district, the half of the energy required by the district is to be recycled from sewage and waste. Therefore, a recycling system inside the district has been established where energy recycled from waste and sewage are used for air conditioning in residential facilities and as fuel for inner city buses, taxis, garbage trucks, and gas heaters, etc.

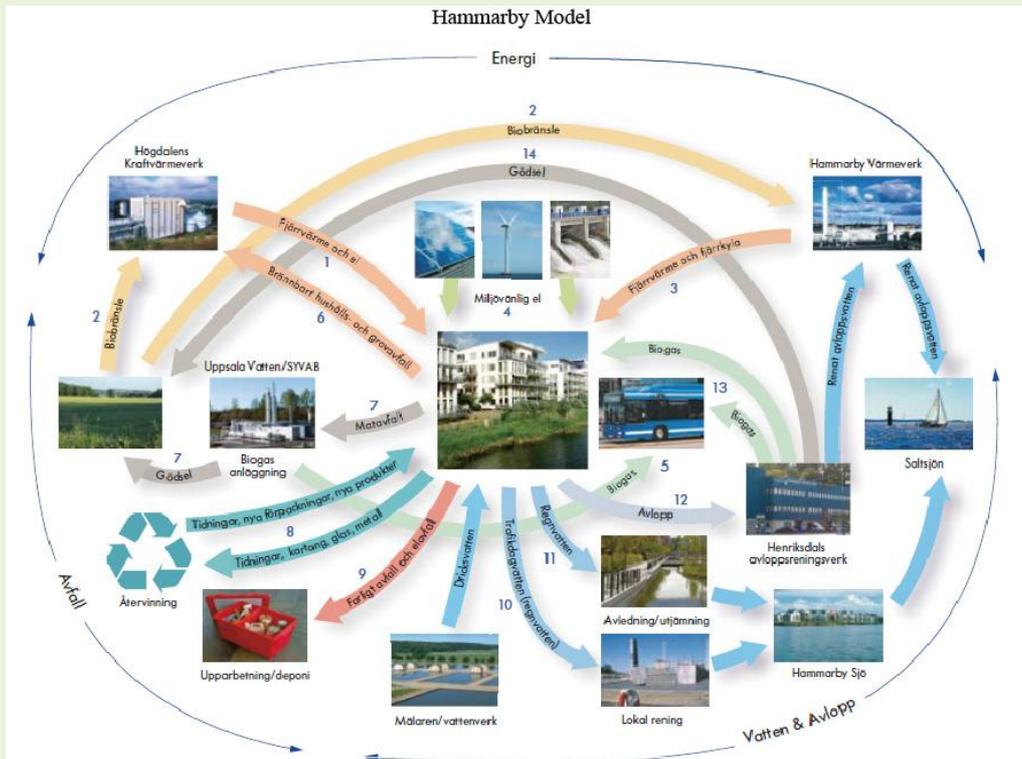
Solar panels are installed on the roofs of many buildings as are solar heaters to supply hot water, and many other efforts are being taken, such as using fourfold windows for heat insulation of housing and buildings, and promotion of water saving using a technology that dissolves air in water.

Furthermore, environmentally-friendly transport systems are being promoted, such as introducing LRT in the center of the district, establishing bus routes to access the city center, and operating a biogas ferry running 365 days of the year from early in the morning to late at night on the lake adjacent to the district. The use of electric vehicles is being promoted by installing charging spots, and car sharing has been also advanced.

These efforts to build an environmentally-friendly city are called the “Hammarby Model,” and it is attracting much attention around the world.



Source: Stockholm City



Energy

1. To use combustible wastes for district heating and power generation.
2. To use biomass fuels for district heating and power generation.
3. To use treated sewage water for district cooling and heating.
4. To use solar energy for power generation and hot water supply. The electricity shall meet the criteria of the Good Environmental Choice Label.
5. To extract biogas from sewage sludge and raw garbage.

Wastes

6. To use combustible wastes for district heating and power generation.
7. To convert the decomposed raw garbage into biogas for use as a fuel for automobiles. To use sawdust, tree bark, etc., as fertilizer compost.
8. To recycle anything recyclable, such as newspaper, cardboard, glass, metal, etc.
9. To recycle or bury harmful waste, batteries, etc.

Water and sewage water

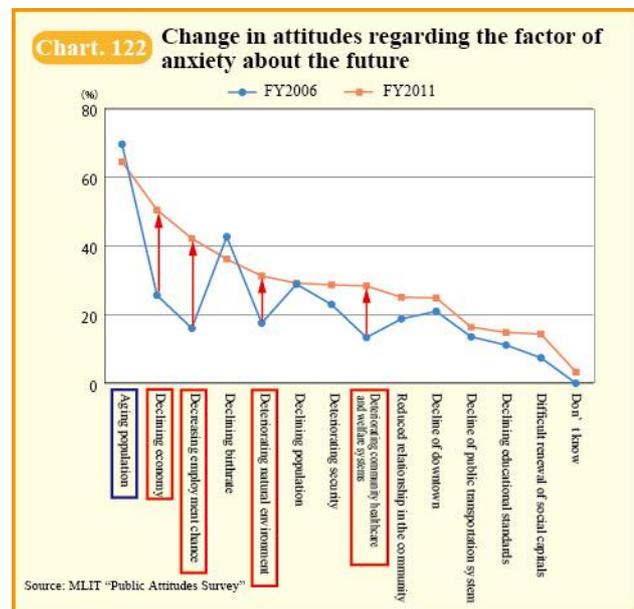
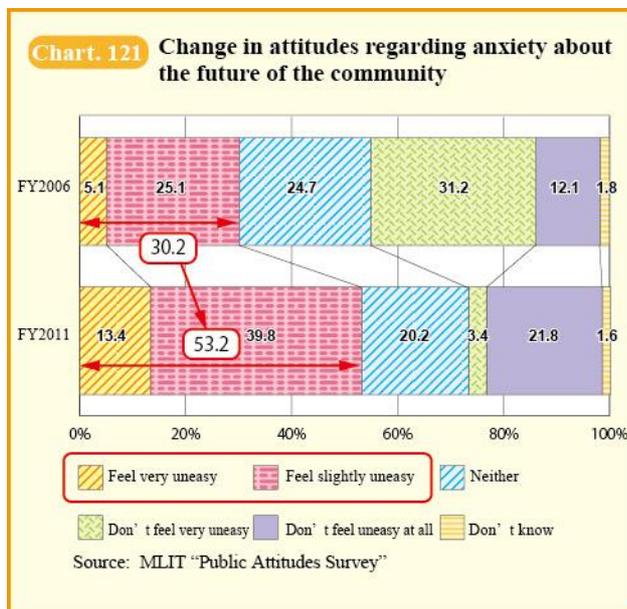
10. To locally treat rain water pooled on roads to avoid overburdening sewage treatment plants.
11. To have rainwater from gardens and roofs flow into Lake Hammarby.
12. To utilize treated sewage water for district cooling and heating.
13. To extract biogas from biodegraded sewage sludge.
14. To use the biodegraded sewage sludge as compost.

5 Increasing number of areas having difficulty maintaining their communities

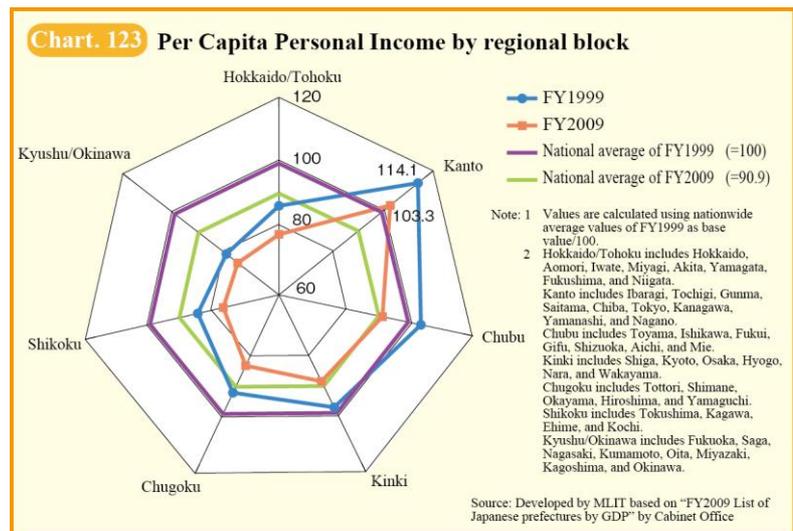
Under severe economic conditions with a declining population, aging society, financial restrictions, intensifying international competition, etc., climate change associated with global warming further has been weakening our national land. In this changing situation, there is fear that the safe and secure life of nations living in regional areas is threatened and it will be difficult to maintain the community. The following is an overview of the current status of regional areas:

(Anxiety about declining population and aging society)

What are the people living in regional areas anxious about regarding the future? A comparison of public attitudes between the FY2011 survey and FY2006 survey regarding the same question shows that the ratio of people answering “feel uneasy” has increased from about 30% in FY2006 to more than 50% in 2011. This means more than half of the nation is living feeling uneasiness about conditions. The biggest factor they felt uneasy about is the “aging population” both this time and in the FY2006 survey. The reason for the increasing ratio is “deterioration of community healthcare and welfare system,” in addition to “declining economy,” “decreasing employment opportunities,” and “deteriorating natural environment.” It can be assumed that the downturn of local economies and the style of medical and welfare service will be issues.



As a matter of fact, looking at recent Per Capita Personal Income by prefectural block, the national average declined about 9% during the period from FY1999 to 2009. With regard to changes by prefectural block, index values of FY2009 calculated using the national average values in FY1999 as the base year/100 show that only the Kanto block is largely exceeding 100 but all other blocks are falling below 100, thus showing the gaps between regions are expanding.

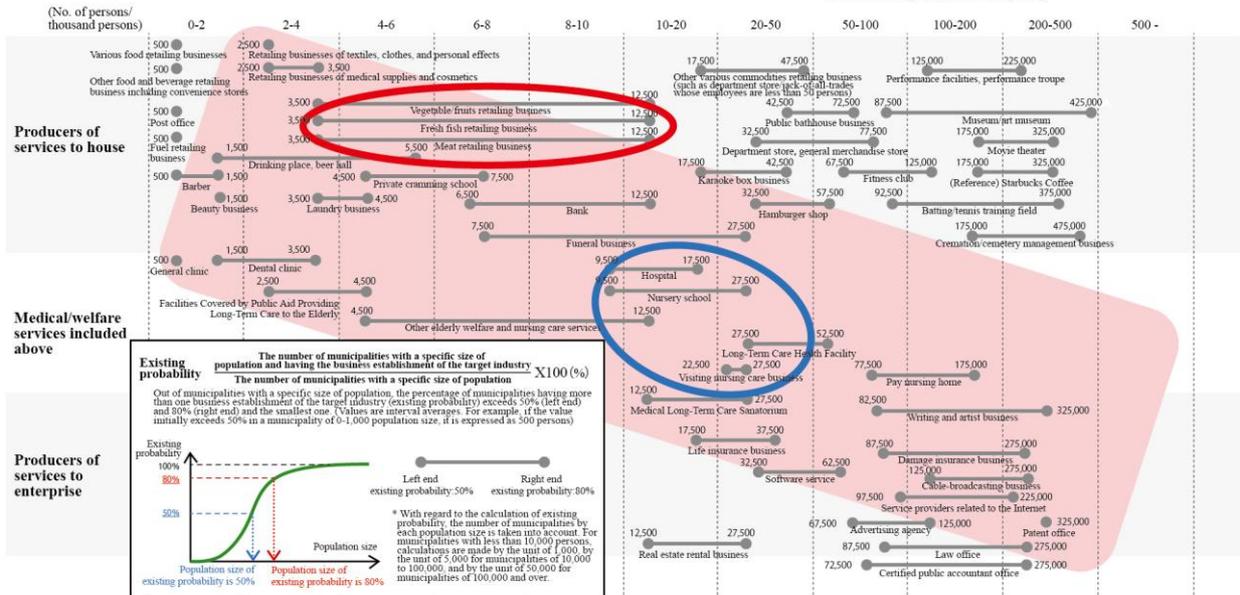


In addition, looking at the result of a survey studying the population size of municipalities that in-municipality location percentage for service industries supporting local life are more than 50% and 80%, the food service industry including vegetable/fruits retailing business is locating inside the municipality even when the population size of the municipality is less than 10,000, but it is found that medical /welfare services located at the percentage of more than 50% requires a population size of more than 10,000. In the future, there is concern that the number of municipalities having difficulty securing medical/welfare services will increase due to the declining and aging population of the community.

Chart. 124 Map of services by population size

<Population size where the percentage of in-municipality location exceeds 50% and 80%>

(When municipalities are regarded as a unit for supplying services that are closely-related to daily life)



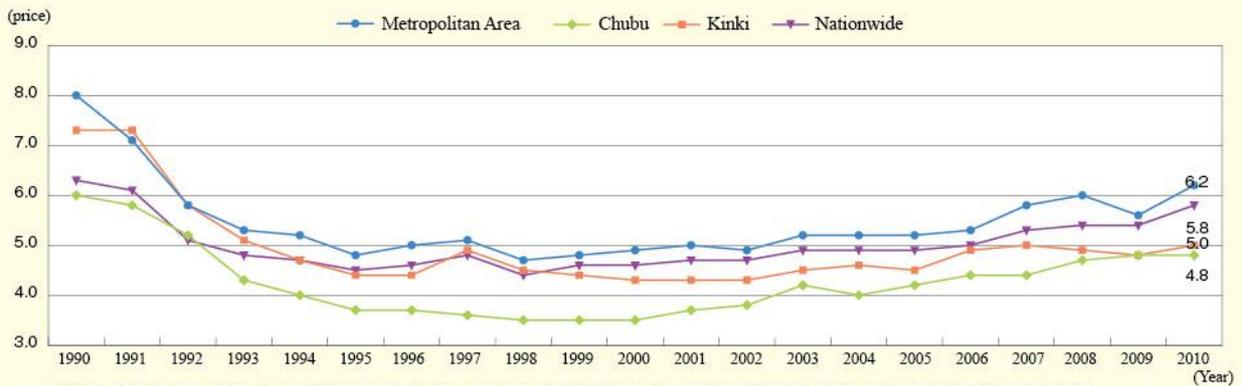
* The number of municipalities whose population size is less than 10,000
 Year 2000: 1,557
 Year 2005: 787
 Year 2010: 482

Source: Developed by MLIT from the following materials:
 -Hospital/General clinic/Dental clinic: Ministry of Health, Labor and Welfare "Statistical Survey for Regional Public Health Service 2009"
 -Facility Covered by Public Aid Providing Long-Term Care to the Elderly, Long-Term Care Health Facility, Medical Long-Term Care Sanatorium: Ministry of Health, Labor and Welfare "Survey of Institutions and Establishments for Long-term Care 2008"
 Starbucks Coffee: the website of Starbucks Coffee Japan.
 Other business establishment: Ministry of Internal Affairs and Communications "2006 Establishment And Enterprise Census Of Japan" and "Population Census"

(Change in economic environment to acquire housing)

Recently, the economic environment for newly acquired residences is getting severe. Examining changes of percentage of the annual income to housing (condominium) price, so-called soaring land prices of the bubble period, etc., raised home (condominium) price especially in large metropolitan areas, and in the peak period of 1990, it recorded 8.0 times in metropolitan areas, but afterwards, it declined to 4.7 times in 1998. However, recently in metropolitan areas, home prices are getting higher and the annual income of worker households is getting lower. For this reason, the percentage to the annual income for 2010 (6.2 times) is moving higher.

Chart. 125 Percentage change in the annual income to housing (condominium) price

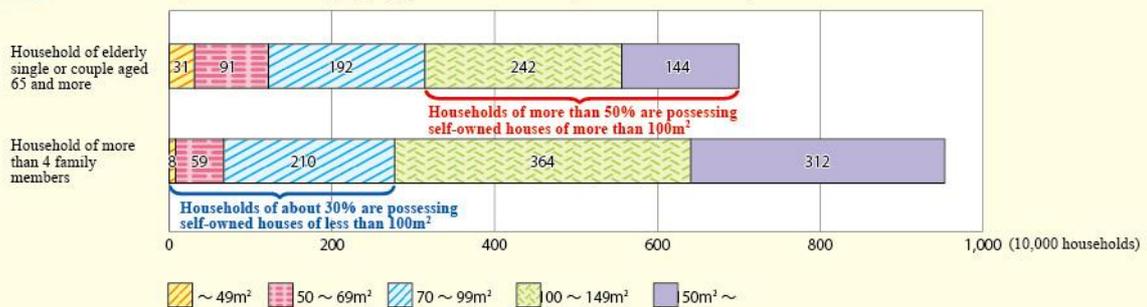


Note: 1 Data for home prices was created from average values of newly sold privately-provided condominium indicated in the "National Condominium Market Trends" by the Real Estate Economic Institute Co., Ltd.
 *Metropolitan Area: Tokyo, Kanagawa, Chiba, and Saitama
 Chubu Region: Nagoya-city, Vicinity of Nagoya, Gifu, Mie, and Shizuoka (However, Gifu is excluded from 2010 Data")
 Kinki Region: Osaka, Kyoto, Hyogo, Shiga, Nara, and Wakayama
 2 Data for annual income before 2000 is created from the average income of worker households in large metropolitan areas of Keihinyo, Chukyo, Keihanshin, and other areas through the country, described in the "family savings survey" issued by Ministry of Internal Affairs and Communications
 For 2001, "Family Income and Expenditure Survey Report (savings and debts version)" by the Ministry of Internal Affairs and Communications
 Average income of worker's households from January to March 2002, after 2002, average annual income of worker households.
 Source: Developed by MLIT from data such as "National Condominium Market Trends" by Real Estate Economic Institute Co., Ltd., and "Family Income and Expenditure Survey" by Ministry of Internal Affairs and Communications

(Mismatch of housing stocks and residential needs)

In view of housing usage, it is also a problem that there is a mismatch of housing stocks and residential needs. Looking at the relationship between the household structure and floor area, more than 50% of elderly singles or couples aged 65 and older possess self-owned houses of more than 100m², and on the other hand, about 30% of households of more than 4 family members are living in houses with less than 100m² floor space. It can be said that there is a mismatch in housing supply and demand.

Chart. 126 Total floor space of housing by type of household (self-owned house)

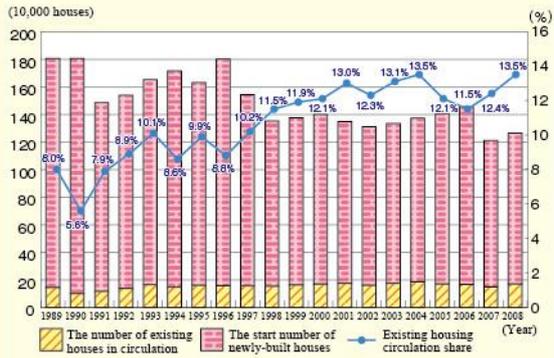


Source: Specially calculated and processed by MLIT based on "2008 Housing and Land Survey" issued by Ministry of Internal Affairs and Communications

(For the development of existing housing circulation/home-improvement market)

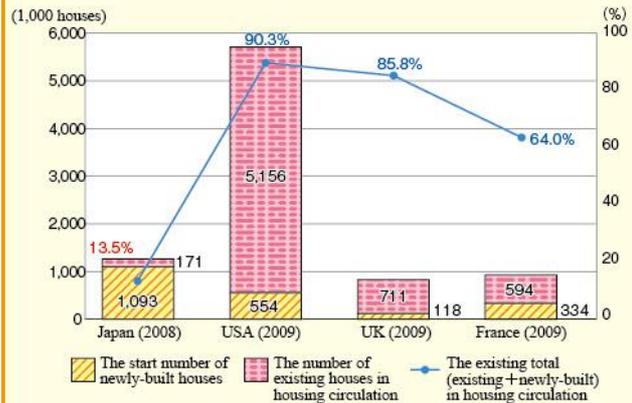
Under the difficulty of acquiring newly-built houses due to recent changes in economic conditions, the importance of the existing (second-hand) housing market is increasing. In addition, improving the existing housing market is required to resolve the mismatching of housing stocks and residential needs. However, changes of existing housing circulation share in Japan's housing market is 13.5%, which is showing a slightly increasing tendency in recent years, but it is still extremely low internationally compared with other countries such as 90.3% for the United States and 85.8% for United Kingdom.

Chart. 127 Trend of existing housing circulation share



Note: Values for the number of existing houses in circulation regarding 1993, 1998, 2003, and 2008 were estimated from the values from January to September, respectively.
Source: Developed by MLIT from "Housing and Land Survey" issued by Ministry of Internal Affairs and Communications, and "Statistics of Housing Starts" issued by MLIT

Chart. 128 International comparison of existing housing circulation share



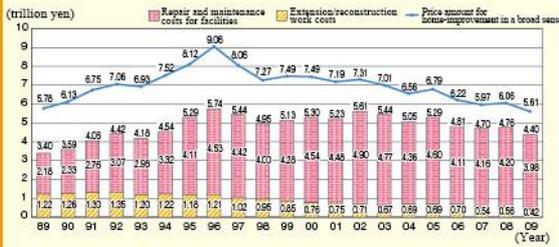
Note: 1 Japan: Values for the number of existing houses in circulation for 1993, 1998, 2003, and 2008 were estimated from the values from January to September, respectively.
2 France: For the calculation of the annual circulation amount of existing housing, the annual average value of annual equivalent value of monthly existing housing circulation amount was adopted.
3 UK: since the number of housing transactions includes newly-built housing transactions, "the number of housing transactions" - "the number of newly-built housing completions" was treated as the number of existing houses in housing circulation. Moreover, transactions of more than 40,000 pounds are included in the number of housing transactions. In addition, HMRC of the data source research institute estimates that this threshold excludes 12% of all transactions from survey target.

Source: Japan: "Housing and Land Survey 2008" by Ministry of Internal Affairs and Communications, "Statistics of Housing Starts (data of 2008, calculated in 2009)" by MLIT
USA: "New Residential Construction" by the U.S. Census Bureau, "The 2011 Statistical Abstract" (Data of 2009)
UK: "Housing Statistics" by Department for Communities and Local Government (Data of 2009)
France: Insee "enquête logement" (Data of 2008) [http://www.insee.fr/Ministere de l'Ecologie, de l'Energie, du Developpement durable et de la Mer "Conseil general de 'environnement et du developpement"](http://www.insee.fr/Ministere de l'Ecologie, de l'Energie, du Developpement durable et de la Mer 'Conseil general de 'environnement et du developpement) (Data of 2009)

To circulate existing (second-hand) houses, home-improvement such as earthquake-resistant fittings, barrier-free access, responses to aging society and disaster, and energy saving will be required. For example, approximately 21% of existing house stocks in Japan, 10.5 million houses out of approximately 49.5 million stocks are not currently provided with sufficient earthquake-resistant fittings.

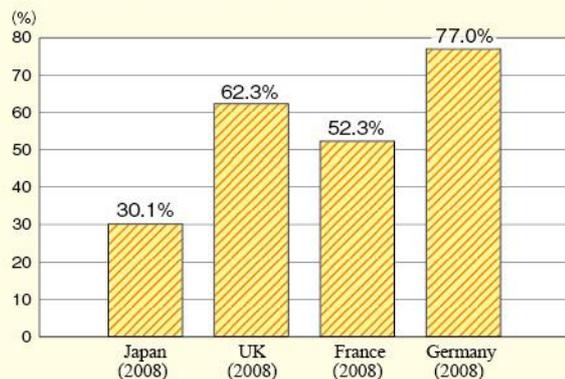
However, the market size of home-improvement was estimated as approximately 5.6 trillion yen in 2009, and therefore, it can be said that the ratio of home-improvement to housing investment of Japan is extremely small (about 30%), compared to that of Western countries (50%-80%).

Chart. 129 Change of the home-improvement market size (estimated value)



Note: 1 Improvement cost for large-sized common space in condominiums, improvement cost for rental housing by the owner of the rental housing, exterior work for outdoor facilities, etc., are not included in the estimated values.
2 Values for "home-improvement in a broad sense" include expansion/reconstruction work costs associated with an increase in the number of houses, home-improvement-related consumers' durables, purchase costs for interior goods, etc.
Source: Estimated values calculated by the Center for Housing Renovation and Dispute Settlement Support

Chart. 130 International comparison of housing investment share to home-improvement



Note: Values for housing investment in Japan do not include home-improvement investment. The share of home-improvement to the overall housing investment is lower than this.

Source: Japan: Cabinet Office "National Economic Account" and estimated values calculated by the Center for Housing Renovation and Dispute Settlement Support
UK, France, and Germany: materials of the Euro Construct

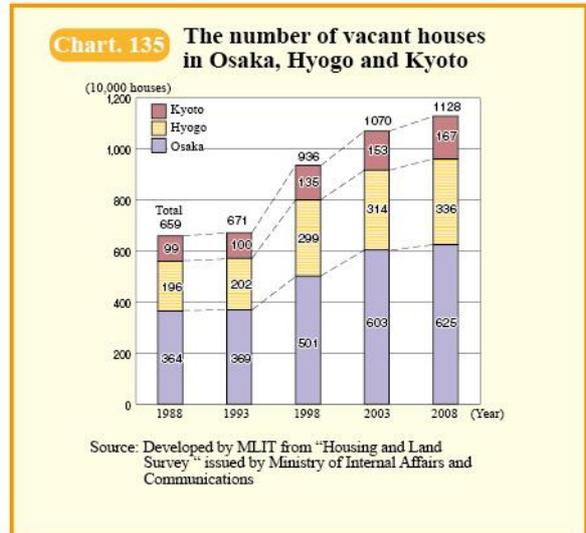
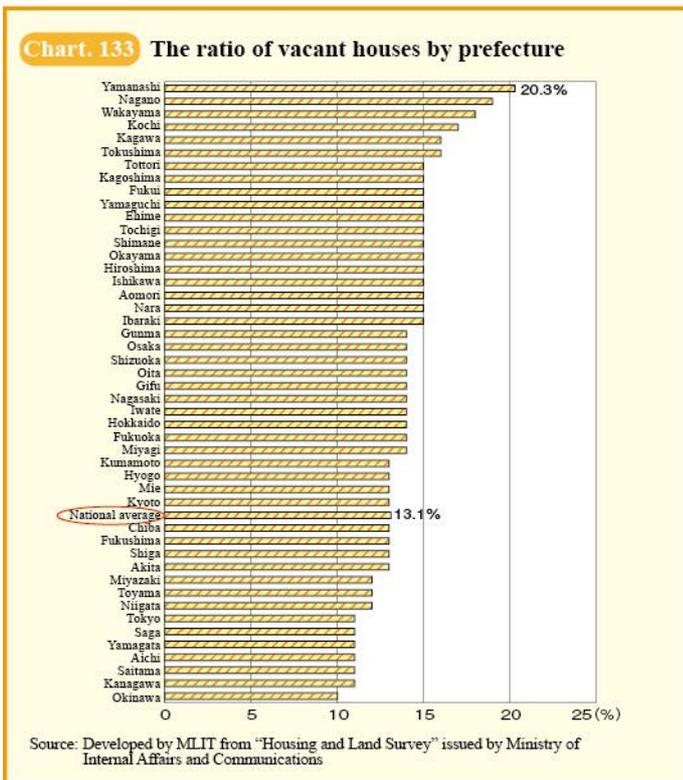
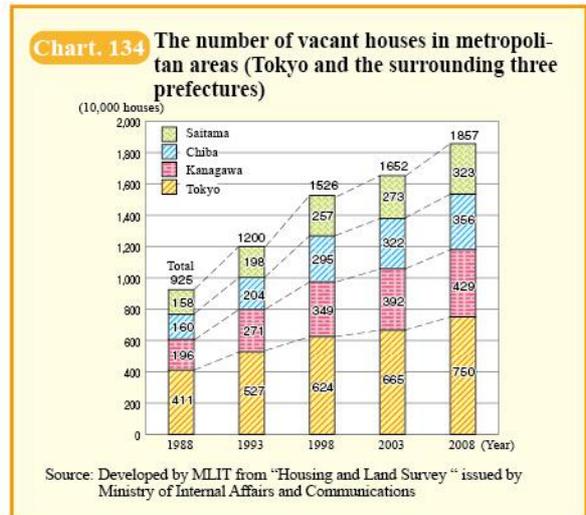
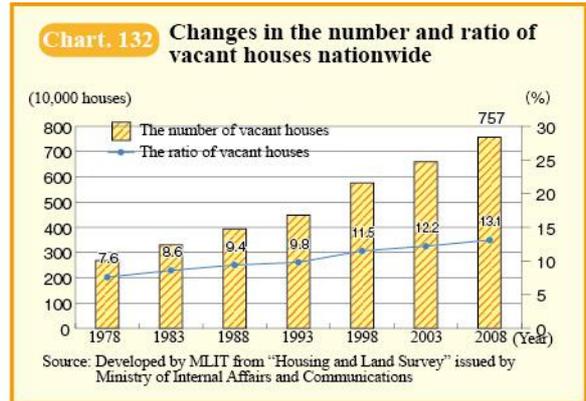
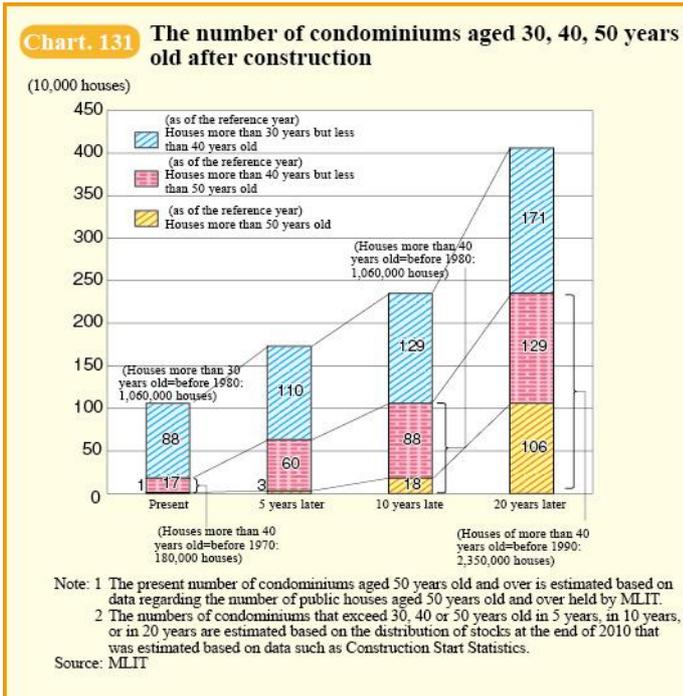
(Increase of old housing stocks and vacant houses)

From now on, condominiums that are more than 30 years old will largely increase. It is assumed there will be 2.35 million condominiums in 10 years at the end of 2021, and 4.06 million condominiums 20 years later at the end of 2031.

Condominiums for which construction started before June 1981, when quake-resistance standards in the Building Standards Act were strengthened, may be lacking in earthquake resistance. However, seismic capacity evaluation and repair work costs are high. A steady response to the need for reconstruction is required from the condominium management association, etc.

Furthermore, the ratio of vacant houses is increasing in recent years, expanding to approximately 13% as of 2008, recording approximately 7.57 million houses of vacant houses nationwide. Although the ratio of vacant houses is especially high in rural districts, it is also a serious issue in urban areas, as seen in the number of increasing vacant houses in the metropolitan area (Tokyo and the three surrounding prefectures), showing an increase of approximately 200,000 vacant houses for the 5 years from 2003 to 2008.

To resolve this issue, it is important to promote projects including regional revitalization for utilizing vacant houses, etc., conducted by local public authorities. The Tokyo Metropolitan Government is planning to utilize vacant houses as apartment houses for elderly people from FY2012.

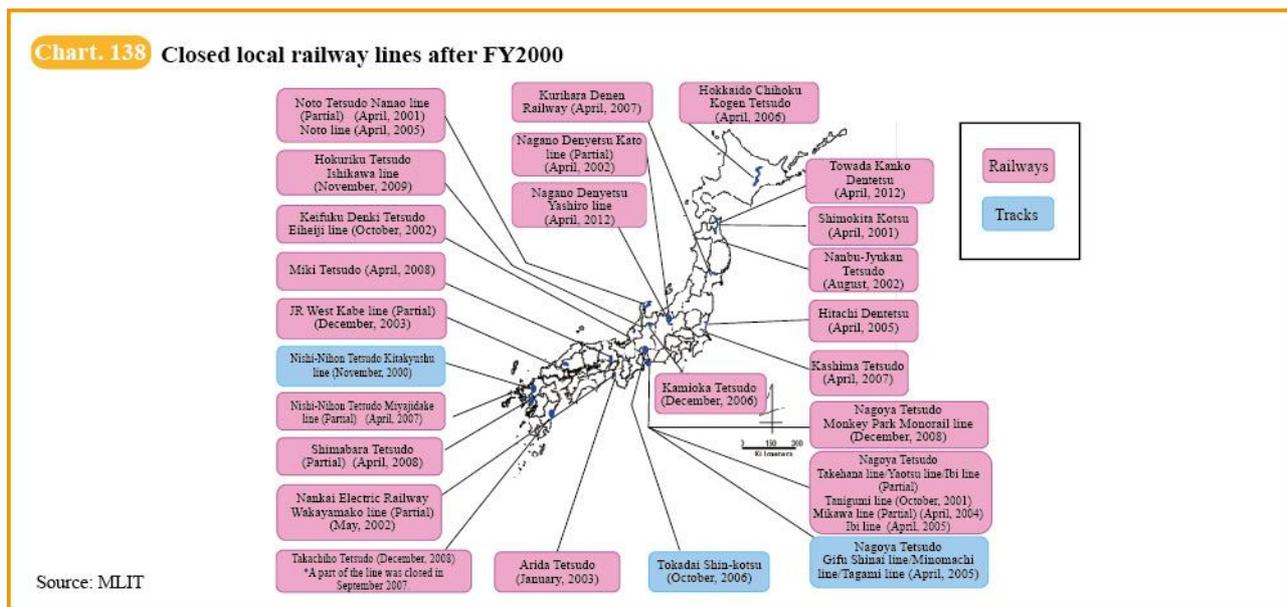
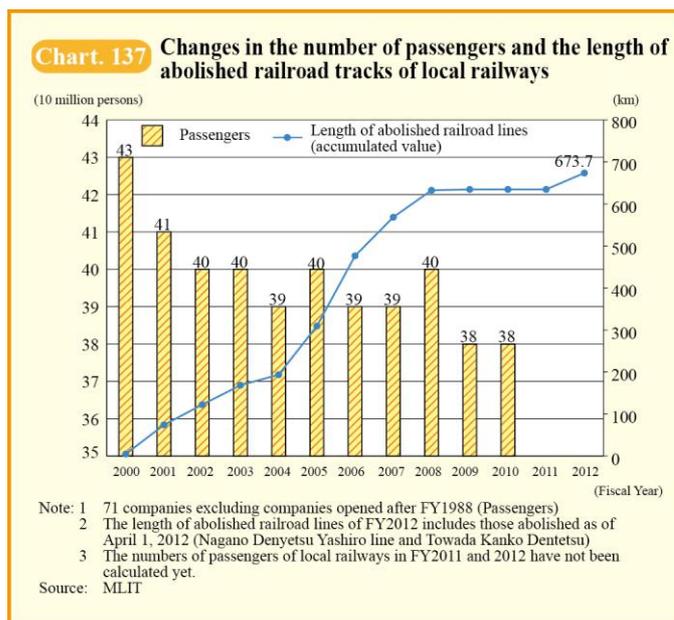
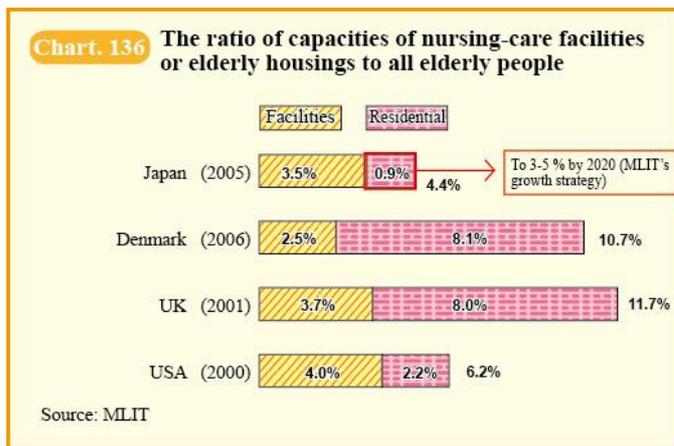


In addition, with the transition to an aging society, the number of elderly single or couple households is increasing. It is estimated that the number will increase from approximately 10 million to 12.45 million households in the 10 years from 2010 to 2020. In the view of these circumstances, it is very important to secure housings that supply support services to the elderly, in cooperation with nursing/medical services. The ratio of capacities of nursing-care facilities or elderly housings to all elderly people is only 4.4% in present Japan. Supply of nursing-care facilities or elderly housings is falling behind other countries, in comparison with United Kingdom's 11.7% and Denmark's 10.7%.

(Financial crisis of local bus/railway companies which support local transport)

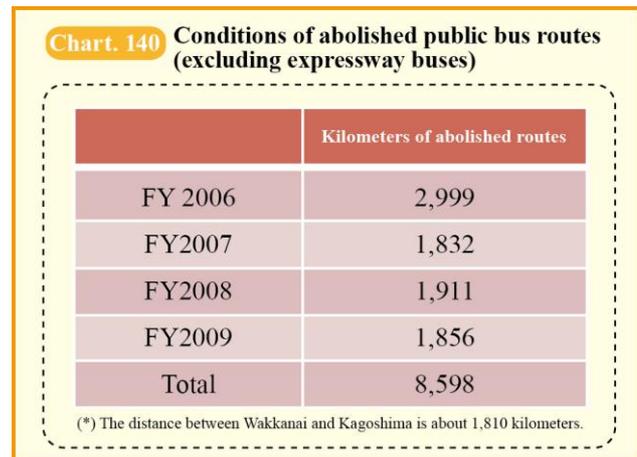
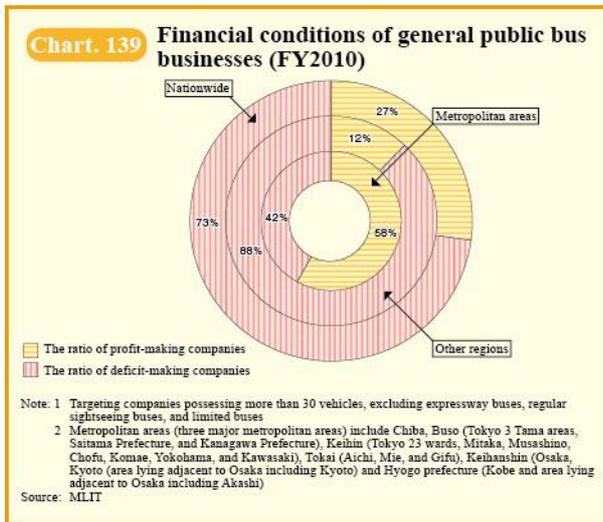
The number of users of public transportation systems including local railways and public buses has been decreasing due to the rapid progress of the aging society, declining population, and diversified user needs associated with the dissemination of private cars. The decrease of users of public transportation systems deteriorates business fundamentals of railway companies and bus companies, forcing these companies to abolish local bus lines and railway lines almost every year. The environment surrounding local public transportation is extremely severe.

The business environment surrounding local railways^{Note} is very severe, and 73 of the total 92 companies (approx. 80%) faced deficits in 2010. 35 routes, 673.7 kilometers of railroad tracks were abolished nationwide during the period from April 2000 to April 2010, due to bankruptcy of the company, etc.

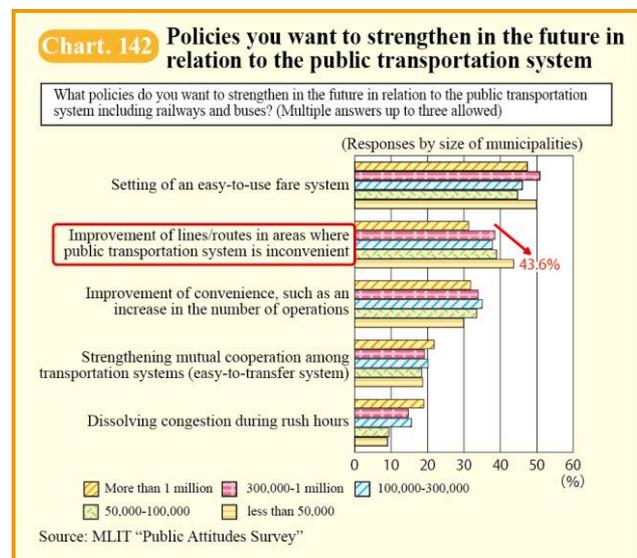
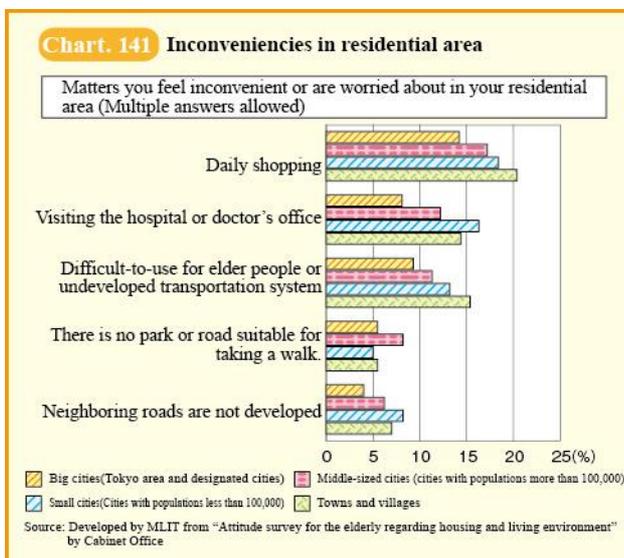


Note: Local railways include 4 types of railways: “small and medium sized private railways,” “converted railways (railway taken over from local lines of the Old Japan National Railways by entities such as the third sector),” “local railway lines (the construction stopped once in the era of the Old Japan National Railways and re-started later, and the third sector took over the management after operation restart),” and “Parallel existing lines (existing lines that run in parallel with Shinkansen-lines detached from JR companies after the opening of new Shinkansen lines)”.

The business environment surrounding bus companies is also severe, and public bus companies showing a deficit are about 90% in rural districts, and about 70% nationwide. Under these circumstances, the number of bus company bankruptcies and abolished bus routes has continued to rise. Approximately 2,000 kilometers of bus routes are abolished every year.



According to a questionnaire survey targeting the elderly concerning inconveniences in their residential areas conducted by the Cabinet Office, many respondents said they feel inconvenience for “Daily shopping,” “Visiting the hospital or doctor’s office,” and “Undeveloped transportation system,” and there was a tendency that the smaller the population becomes, the larger the degree of inconvenience. Furthermore, in this attitude survey, many respondents said they would like to strengthen the policies related to “Setting an easy-to-use fare system,” “Improvement of lines/routes in areas where public transportation system is inconvenient” in future. The smaller the population size, the more people answered “Improvement of lines/routes,” and especially, 43.6% of people chose “Improvement of lines/routes” in cities with populations of less than 50,000.



Under these circumstances, regional areas with transportation difficulties are taking various measures in coordination with the actual status of the region, including community buses^{Note} and share taxis as a means of transportation necessary for their daily life such as shopping and visiting hospitals.

Note: The community bus means a bus service that runs inside a specific area to improve the convenience of transportation for local people, with many measures related to the use of vehicles, fare, bus stops, and other related services.

Chart. 143 Past traffic performance of route buses in FY2008

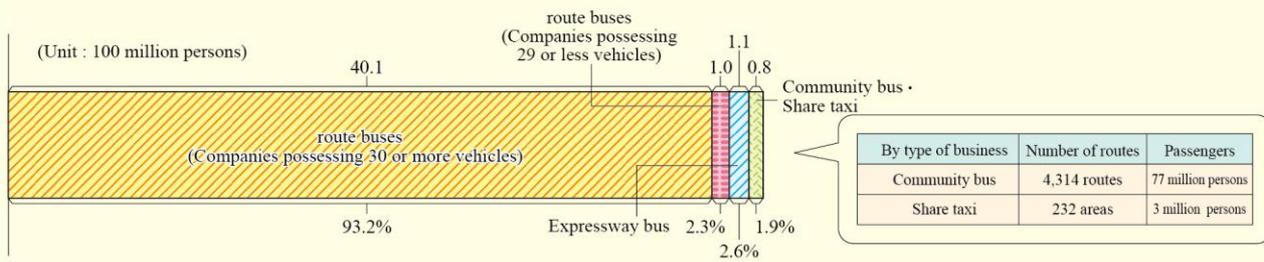


Chart. 144 Conditions of community bus introduction

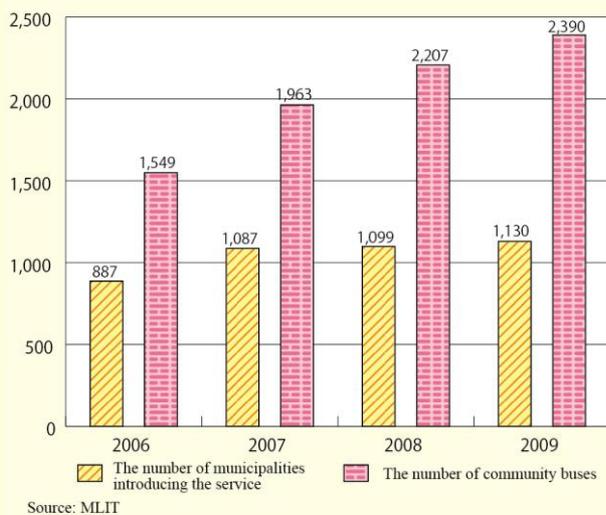
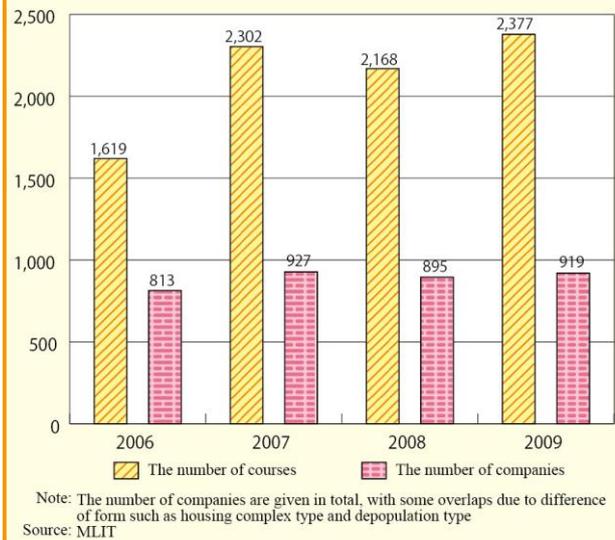


Chart. 145 Conditions of share taxi introduction



Local railroads and buses are playing an important role as a means of transportation for local residents in commuting to school or work. If vacant zones of public transportation increase, gaps in the range of daily activities are generated between the people who can drive a car and the people who cannot, including the elderly and children. There is fear that the gap could increase further in regional areas with insufficient public transportation. To maintain the vitality of communities, it is important to develop an environment where daily convenience can be maintained and opportunities for social participation can be secured, and therefore, the maintenance of regional transportation will be an issue.

Column Public transportation as a lifeline of remote islands

Although 390,000 persons, 0.3% of the total population, are living on 254 remote islands that have been subject to the Remote Islands Development Act as of April 1, 2012, out of all remote islands with inhabitant in Japan, the population of remote islands has declined by about 8% during the past 10 years.

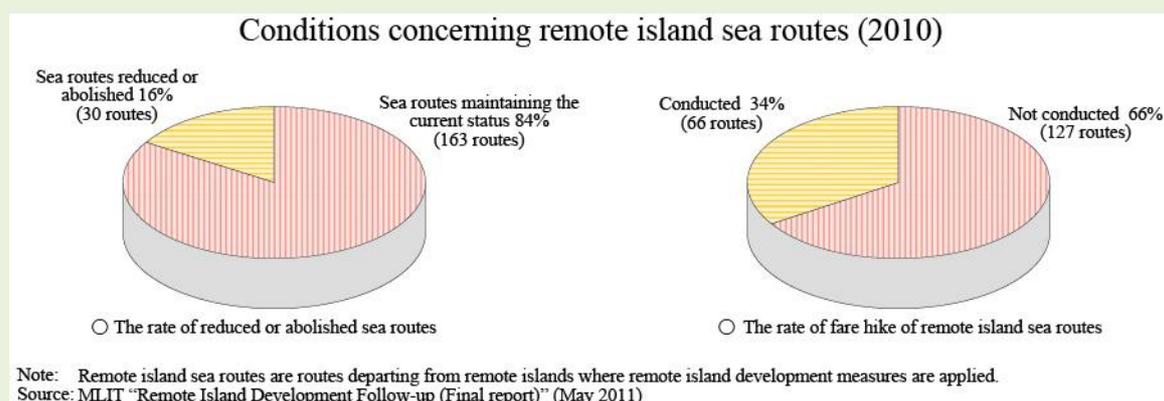
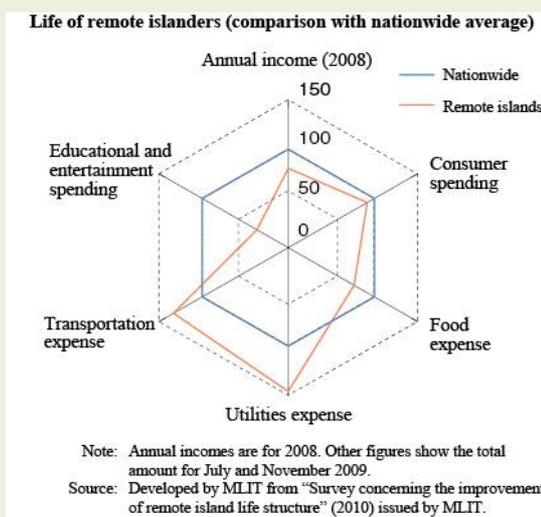
In comparing life in remote islands with national average life, income and consumer spending are about 80% and 90%, respectively. Food expense, educational and entertainment expense, and other expenses out of the consumer spending are lower in comparison with the national averages, but transportation expense costs about 20 to 50% higher.

Since services such as medical facilities and commercial establishments are not sufficient on the islands, remote island routes in sea and air are lifelines of islanders. However, the number of island route users is declining, and when comparing

2002 and 2006, a decrease of about 11% is shown due to such factors as declining population in remote islands. The managerial environment surrounding remote island routes is severe due to the declining number of users and fuel price increases, and therefore, many of them have been forced to reduce the number of routes (23 island routes [about 12% of all remote island routes]), to increase fares (66 island routes [about 34% of all remote island routes]), and to abolish routes (7 island routes [about 4% of all remote island routes]).

Reducing the number of remote island routes in sea and air will significantly impact not only the life of the islanders but also the industries on the islands, reducing the convenience for tourists and shipping of island specialties to the mainland. Maintaining and improving the service level of transportation in sea and air is one of the most important issues among promotion items, in addition to safe and secure transportation relating to remote island routes in sea and air.

To cope with these issues, the Government has taken measures to support efforts for maintaining and improving remote island routes in sea, through the “Project to secure, maintain, and improve local public transportation” in FY2011. As for remote island routes in air, the FY 2011 tax reform has reduced the aircraft fuel tax and mitigated the fixed assets tax for small aircraft.

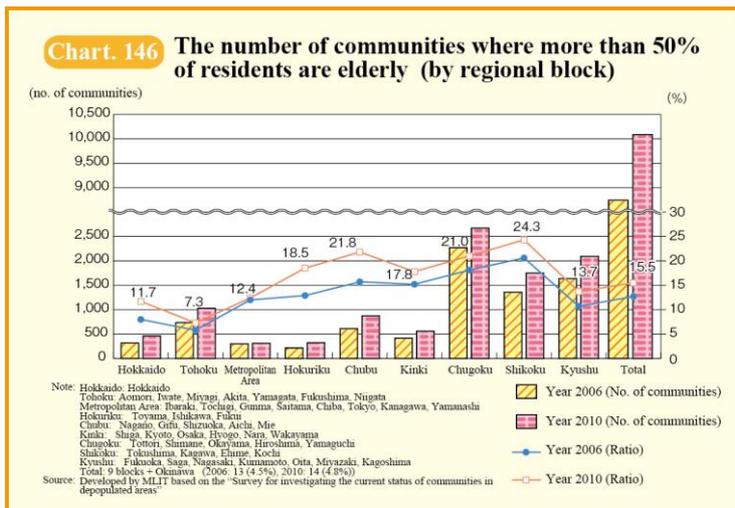


(Increasing number of communities with an aging population)

With the rapid changes of declining population and aging society, some communities are facing difficulties in maintaining their function as a community. According to a “survey for investigating the current status of communities in depopulated areas” conducted by the Ministry of Internal Affairs and Communications and the Ministry of Land, Infrastructure, Transport and Tourism, the number of communities where more than 50% of the residents are people aged 65 and over is 10,091 as of 2010. When this is compared with the previous survey (as of 2006), the ratio of such communities has increased from 12.7% to 15.5%.

In communities facing such a rapidly-declining and aging population, it may be difficult to secure daily

services for residents, including shopping, local transportation and medical welfare services, and to maintain common facilities and mutual assistance in daily life. It will be an issue to promote cross-regional cooperation, with regard to efforts for supporting community life and activities conducted by non-profit organizations including NPOs, and for securing access to life-related services.



(Increase of heavy snow damage)

Furthermore, in areas where the community base has been weakened, including communities with an aging population, regional disaster prevention capabilities also tend to be weak as shown when heavy snow damage occurs.

In the FY2010 Heavy Snow, 131 persons died of accidents during snow removal work, etc. In the FY2011 Heavy Snow, human injury as of March 29, 2012 was 130 persons, and most of them died of accidents during snow removal work. 60% of casualties were aged 65 and over, showing the same tendency as the 2010 Heavy Snow.

According to a nationwide municipal questionnaires to municipalities locating in heavy snowfall areas, 32% of municipalities in heavy snowfall areas and 48% in special heavy snowfall areas answered that they were having problems removing snow from vacant houses, etc. In December 2011, some cities in Akita Prefecture including Daisen and Yokote enacted “Vacant house Ordinances,” which allow municipalities to instruct, advise, or order owners to properly maintain or dismantle vacant houses at risk of collapse by snow.

In addition, the decreasing ratio in the number of authorized contractors is slightly high in prefectural governments including municipalities designated as heavy snowfall areas, in comparison with other prefectures, and therefore, it is a serious issue to secure contractors who undertake snow removal work.

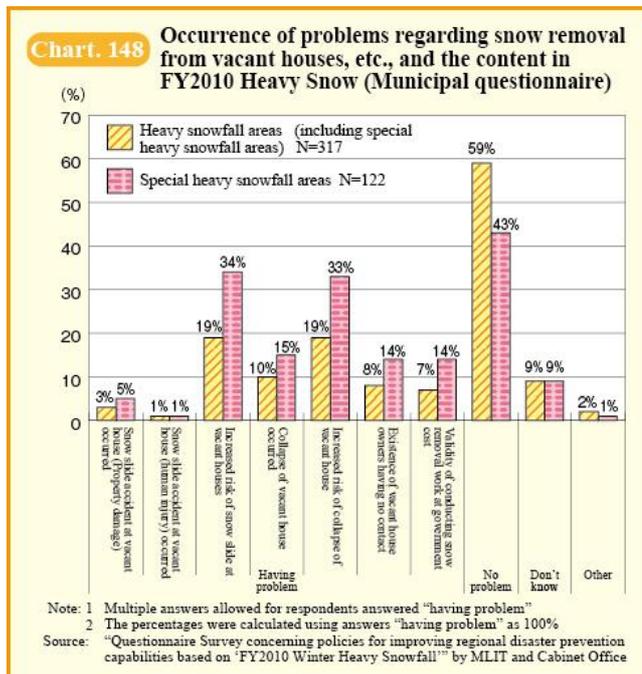
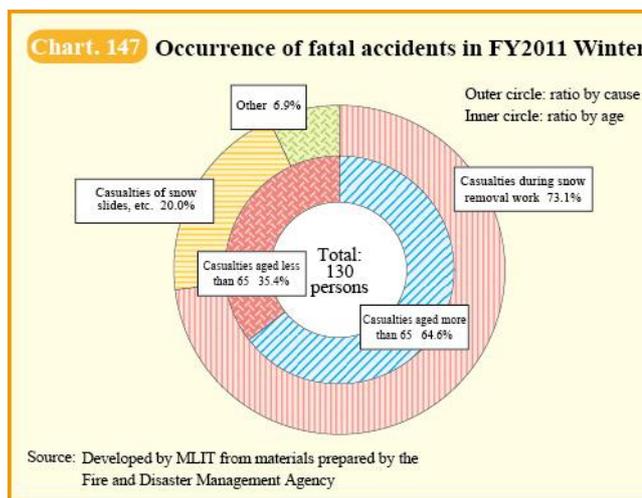
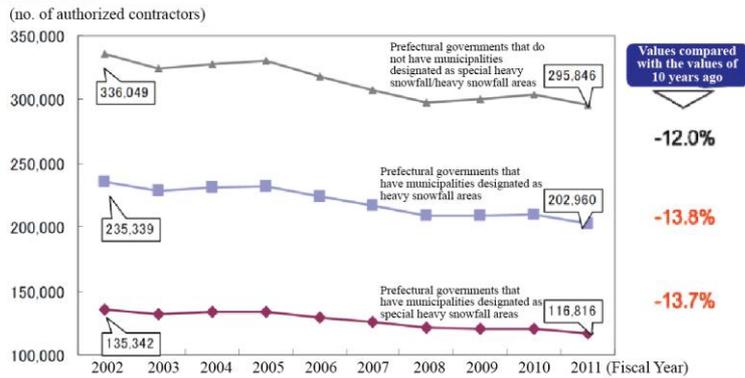


Chart. 149 Change in the number of authorized contractors (past 10 years)



Source: "Results of survey for the number of authorized constructors (Outline) — Current status of authorized contractors (as of March 2011)"

Column Countermeasures for heavy snow through mutual assistance

In heavy snowfall areas where the population is declining and aging, it is an issue to secure manpower for snow removal services. Volunteer systems must be utilized to support snow removal work for senior households.

Niigata Prefecture is promoting the activities of the snow shoveling volunteer group "Sukoppu," that assists with snow shoveling and other related work around the house of senior households. It aims to reduce the burden on senior households, expand interaction with urban cities, and strengthen relationships within the community.

Recruiting volunteer registrants widely from inside and outside the prefecture, the prefectural government is encouraging people to join snow shoveling work in each city, town and village within the prefecture. The activity features many participants from outside the prefecture, and emphasizes interaction with local residents such as the participation of local people as leaders or safety managers to collaborate with them, and holding of interaction parties during the activities.

To participate in the activities of "Sukoppu," one must first register from the prefectural website, etc., and once the activity schedule is decided, the secretariat notifies members about the information via e-mail, etc., and registrants who want to participate in the activity make application (The number of registered members is 1,156 persons as of March 1, 2012, and 60% of members are from outside the prefecture. There was an increase of about 400 members from November 2011). Although the participants pay the transportation and accommodation costs, there are many participants from all over the country every time.

Houses for snow removal are chosen locally, and the local people instruct the participants on how to wear Kanjiki (snowshoes), how to hold shovels, and how to use the snow dumper, etc. With these instructions, even participants who are not used to snow removal work can work safely and can make friendships with local people.

In fiscal year 2011, snow removal volunteer activities by "Sukoppu" were held 10 times in total in respective areas inside the prefecture due to heavy snowfall. A total of 386 volunteers participated in snow removal work.

FY 2011 Activities by the "Sukoppu" snow removal volunteers

No. of times	Activity Date (Date of Year 2012)	Place of activity	No. of participants in total
①	Jan. 28-29	Hachioji/Shibanomata districts, Oguni-machi, Nagaoka-city.	39 persons
②	Feb.4-5	Ohshirakawa/Yokone districts Uonuma-city	82 persons
③	Feb.4	Kawanishi district Tokamachi-city	9 persons
④	Feb.10	Inside Uonuma-city	6 persons
⑤	Feb.11	Itoigawa-city	6 persons
⑥	Feb.11-12	Housue district, Oguni-machi, Nagaoka-city	56 persons
⑦	Feb.11-12	Ohshirakawa district, Uonuma-city	32 persons
⑧	Feb.12	Nakanakayama district, Shibata-city	24 persons
⑨	Feb.18-19	Housue district, Oguni-machi, Nagaoka-city	76 persons
⑩	Feb.25-26	Okura district, Minamiuonuma-city	56 persons
Total	16 days in total		386 persons

In the case where 2 persons joined a two-day and one-night activity twice → counted as 8 persons in total.
Source: Developed by MLIT from materials of Niigata Prefecture

In the Kawanishi district of Tokamachi, participants collaborated with "Musetsutai," a local snow shoveling volunteer group. "Sukoppu" cleared snow from around the house (they do not remove snow from the roof.)



Source: Niigata Prefecture

6 Proper management and renewal of social infrastructure

(Advancing of social infrastructure deterioration)

In our country, the social infrastructure was intensively constructed during the high-growth period. These stocks are assumed to be rapidly deteriorating because 30 to 50 years have passed since they were constructed. Comparing the ratio of social infrastructure that is more than 50 years old today (FY2010) and that in 20 years, for instance, the ratio for road bridges will surge from approximately 8% to 53%. The ratio for river management facilities, such as drainage pump stations and water gates, etc., will surge from approximately 23% to 60%, the ratio for sewer lines will surge from approximately 2% to 19%, and the ratio for harbor quays will surge from approximately 5% to 53%.

Chart. 150 Ratio of infrastructure more than 50 years since construction

	FY2010	FY2020	FY2030
Road bridges *Approx. 155,000 bridges (Bridges longer than 15 meters)	Approx. 8%	Approx. 26%	Approx. 53%
Drainage pumping stations, water gates, etc. *Approx. 10,000 facilities	Approx. 23%	Approx. 37%	Approx. 60%
Sewer lines *Total extension: Approx. 430,000 km (Note)	Approx. 2%	Approx. 7%	Approx. 19%
Harbor quays *Approx. 5,000 facilities	Approx. 5%	Approx. 25%	Approx. 53%

Note : Excludes Iwate prefecture, Miyagi prefecture, and Fukushima prefecture
Source: MLIT

Chart. 151 Deteriorated facilities

Examples of deteriorated river management facilities



Impeller equipment of pump facilities



Gate equipment

Example of National Route 7 Kuretsubo Overpass (concrete bridge) in Yamagata Prefecture



1980 (15 years elapsed):
Cracks and rusty fluid occur in lower surface of main girder



1991 (26 years elapsed):
Breaks in PC steel main girder



1991 (26 years elapsed):
Newly installed 2 props to secure load bearing capacity

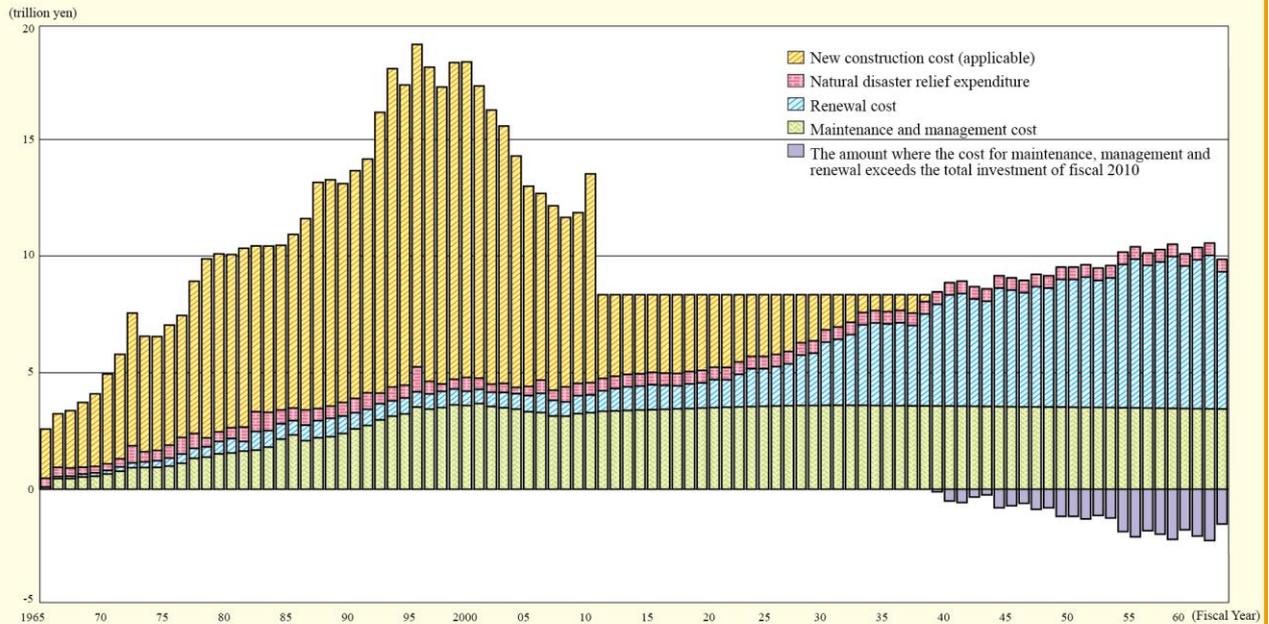
Source: MLIT

(Increase of maintenance, management, and renewal costs)

Taking examples of deteriorated social infrastructure, the cost of maintenance, management, and renewal is expected to increase from now on. Fig.152 shows the estimated cost (including natural disaster relief expenditure; the same shall apply hereinafter) of maintenance, management, and renewal of the social infrastructure of MLIT (roads, ports, airports, public apartment houses, sewage systems, urban parks, river improvements, and coasts) in the future based on the past investment records, etc. If the growth of the total sum of future investment after FY2010 is increased by $\pm 0\%$ compared to the previous fiscal year, and is assumed to continue at the same expenditure level for maintenance, management, and renewal, the cost for maintenance, management, and renewal will exceed the total sum of investment in FY2037. Trial calculation shows that the portion of renewal costing approximately 30 trillion yen (approximately 16% of the entire amount required) out of the total renewal cost required for 50 years from 2011 to 2060 (approximately 190 trillion yen) will not be able to accomplish.

If appropriate maintenance is not carried out due to the lack of funds for maintenance, management and renewal, malfunction of the infrastructure might affect the life of people, and also the possibility of accidents or disasters due to deterioration might become a concern. In fact, there was an accident where a bridge over the Mississippi River in Minnesota, USA, collapsed in 2007. With 13 dead and more than 100 injured, this accident was a catastrophe. Neglecting inspections and repairs, etc., of old infrastructures leads not only to trouble providing the infrastructures' primary functions, but also similar major accident like this in some cases.

Chart. 152 Estimation for usual maintenance, management and renewal



Note: About estimation method

With regard to after 2011, the following settings are conducted, targeting the direct projects, subsidized projects, and non-subsidized projects of MLIT's 8 jurisdictions (roads, ports, airports, public apartment houses, sewage systems, urban parks, river improvements and coasts) to make estimation.

Renewal cost is established by supposing that the renewal will be made with an identical function level even after the lifespan has passed based on the initial new construction cost, and in the light of each facility's actual situation of renewal. The lifespan is determined based on the ordinance of the Finance Ministry that indicates the lifespan in terms of the tax code, and in the light of each facility's actual situation of renewal.

*Maintenance and management cost is estimated based on the correlation with the amount of infrastructure stocks.

(In addition, the renewal cost and the maintenance and management cost reflect the results of cost reduction efforts made in recent years)

*Natural disaster relief expenditure is determined by the average level of the past years.

*New construction cost (applicable) is the sum after deduction of costs for maintenance, management, renewal and natural disaster relief from the total investment, but does not indicate the demand for new construction.

*It does not include the land cost and compensation cost. It does not include the incorporated administrative agency such as each Expressway Company, etc.

In addition, the resulting estimate could fluctuate depending on the factors of future budgetary transition and accumulation of technical knowledge, etc.

Source: MLIT

Chart. 153 Bridge collapse accident in Minneapolis, Minnesota (2007)

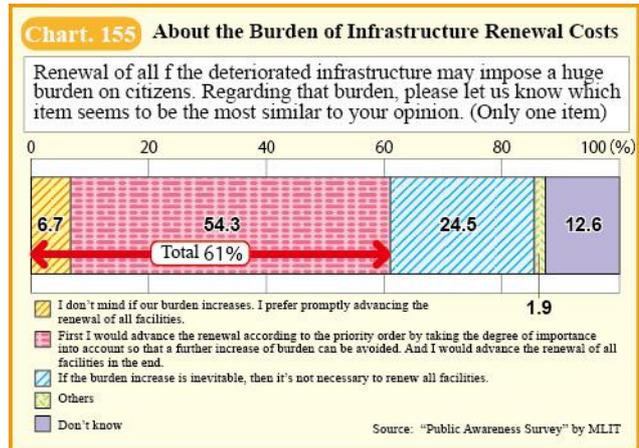
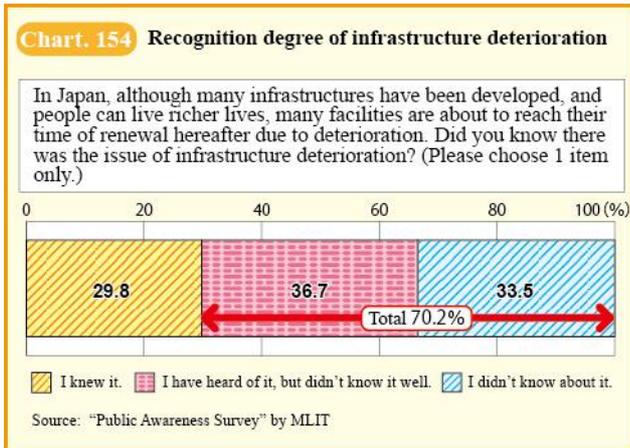


Source: Minnesota Bureau of Public Roads

(Operation of social infrastructure by the asset management)

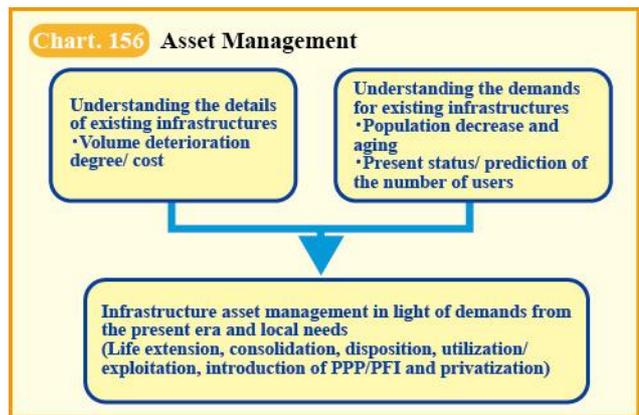
How much do the citizens understand the problems of deterioration of the social infrastructure in our country as mentioned above? According to this National Consciousness Survey, there were approximately 70% of respondents who did not have enough recognition, with their answers: "Heard about it, but did not know about it well" (36.7%) and "Did not know" (33.5%). In addition, although premising that we should refrain from the increase of cost burden for the renewal, approximately 60% of the respondents answered that they wish to "renew all facilities".

In order to fulfill the most important role of social infrastructure to support the safety and security of the country and regions, the effective and appropriate renewal of the deteriorated infrastructure is required.



And, in renewing infrastructure in the future, we need to implement the renewal on the premise that the functions required for infrastructures as well as the local needs will be changing under the social conditions we face, including the aging population combined with low birthrates, the population decrease, the environment issues, and the energy constraints. With the national finance in deficit, in order to implement proper infrastructure maintenance, management, and renewal that can meet with the demands of the present era, we need to achieve effective and efficient facility operation and management in a planned manner through comprehensive as well as strategic management.

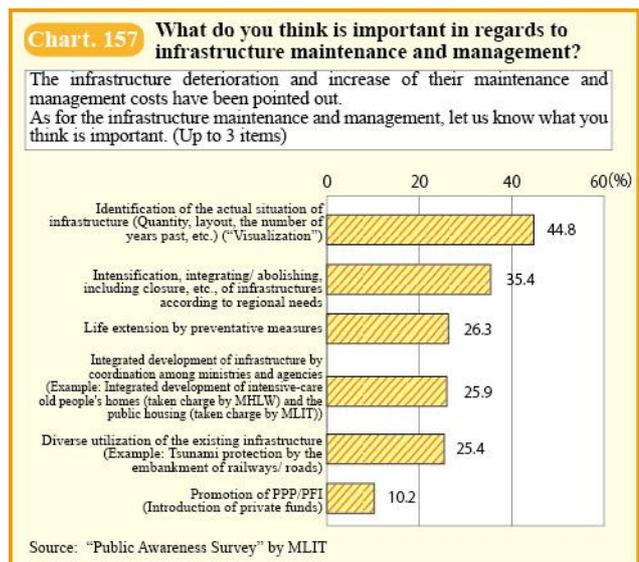
In other words, we should gain an understanding of the volume of existing infrastructures, and their degree of deterioration and renewal costs, and at the same time, acquire information on future demands in the society with population decrease and aging population so that we can maximize the value of infrastructure stocks in light of the demands of the present era for social infrastructure and local needs including the planned and effective maintenance, management, renewal, disposition, utilization, exploitation, consolidation, and privatization.



(Identifying the actual situation of infrastructure – Visualization)

According to this public awareness survey, about 61% replied "facility renewal is necessary" with regards to deteriorated infrastructures. As for the question what is important for facility renewal, the top answer was "identification of the actual situation (visualization)." Many other answers included "intensification/ reintegration according to actual needs," "Life extension," "integrated development," and "diverse utilization."

As most of the infrastructures are the facilities managed by local governments, we should examine in the future how to perform operation and management (asset management) of them while keeping a certain level of infrastructure services, by developing an infrastructure database throughout the nation, prefectures, and municipalities and by utilizing this database from a comprehensive perspective.



(Present Status of Asset Management Promotion)

Asset management promotion can be largely divided into the 3 different levels described below:

Chart. 158 The three Levels of Asset Management

- Routine management:
To improve efficiency in daily cleaning/ maintenance/ repair, etc. (Designated Administrator system, comprehensive entrustment to private entity, etc.)
- Management on a long-term managerial basis:
Total cost reduction through preventive maintenance based on a long-term perspective (Life extension projects, etc.)
- Management on a strategic operation basis:
“Selective/ intensive” infrastructure strategy and management strategy combining funds/ human resource/ technology (Privatization, PFI, Coordination, Public-private facilities complex, etc.)

Source: MLIT

1) Routine management: To improve efficiency in daily cleaning/ maintenance/ repair, etc.

Structures such as roads and dikes are fatigued and deteriorated, causing damage day by day. For ensuring user safety, routine monitoring, maintenance and management are indispensable. Amid the severe fiscal condition of the national and local governments, however, it is required to carry out maintenance and management efficiently and economically by adopting cost cutting measures.

For this, in maintaining and managing the national roads under direct control by the national government, for example, those with regard to the weeding, etc., of all the maintenance and administration standards established in fiscal 2010, were amended and operated in fiscal 2011. We are continuing to study adequate maintenance and management standards by getting the local opinions, etc., and collecting and analyzing data on maintenance and management. Also we are supporting local residents so that they can participate in the routine management operations such as cleaning, weeding, etc., through the introduction of various cost-cutting devices and approaches, etc., as well as the volunteer support programs as a form of road management by user participation.

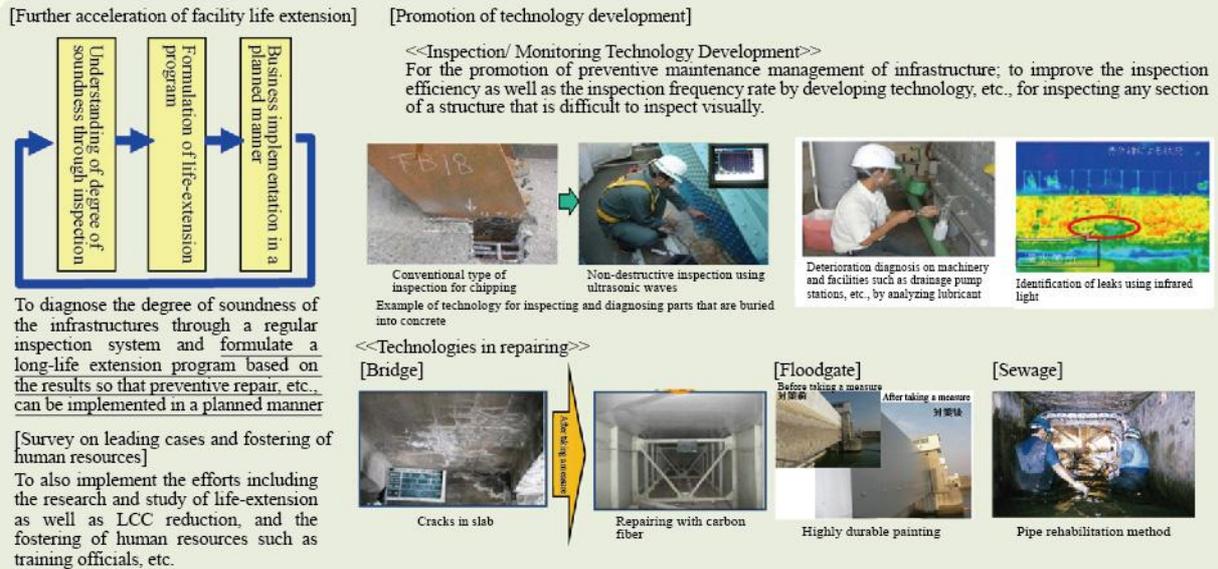
2) Management on a long-term managerial basis: Total cost reduction through preventive maintenance based on a long-term perspective (Life extension projects, etc.)

In order to maintain and renew the existing infrastructures efficiently and appropriately, it is important to have “management based on preventive maintenance,” which aims to extend the life of an entire facility through early detection and repair. We shall aim at the utilization of materials and structures that can be expected to have high durability, and promote the life extension program, etc., through the formulation and implementation of the life-extension program as well as strict implementation of guidance and disposition of vehicles violating the load limits, so that we can achieve a total cost reduction.

Chart. 159 Routine maintenance and management of roads

Source: MLIT

Chart. 160 Efforts for Strategic Infrastructure Maintenance, Management, and Renewal



Source: MLIT

Chart. 161 The rate of progress for life-extension measures and measures against aging in each facility covered by the Infrastructure Development Priority Policy Program (Cabinet decision made on March 31, 2009)

	Initial value	Actual value(as of FY end)			Target value
	FY2007	FY2008	FY2009	FY2010	FY2012
The formulation rate of the life-extending repair program for nationwide highway bridges (Note 1)	28%	41%	54%	63%	100%
The formulation rate of the life-extension program at sewerage systems (Note 2)	0%	Approx.4%	Approx.8%	Approx.24%	100%
The life extension rate in floodgates, etc., at river management facilities (Note 3)	0%	Approx.15%	Approx.31%	Approx.47%	100%
The formulation rate of life-extension measures at port and harbor facilities (Note 4)	Approx.2%	Approx.13%	Approx.58%	Approx.70%	Approx.97%
The rate of coastal preservation area facilities at which measures against aging have been implemented (Note 5)	Approx.51%	Approx.51%	Approx.52%	-	Approx.60%

The initial value (2007) and target value (2012) were as established in the Infrastructure development Priority Policy Program.

* With regard to the rate of formulation of the life-extending repair program at nationwide highway bridges, the data used for Iwate, Miyagi, and Fukushima prefectures were as of April 2010.
* With respect to the urban park facilities, 12 government bodies completed it, and 150 bodies were working on formulation of their measures as of fiscal 2010.

Notes: 1 "Number of highway bridge with life-extending repair programs / Number of Highway Bridges" for nationwide highway bridges of 15m or longer
2 "Number of municipality with life extension programs / Number of municipality managing the end-of-life sewerage pipes"
3 "Number of facilities that have implemented the life extension measures / Number of national river management facilities (floodgate, etc.) that are expected to reach the end of their life during fiscal 2008 - 2012."
4 "Number of facilities that have formulated a long-life extension program / number of major mooring facilities on the level of "major port" or above"
5 "The extension of coastal preservation area facilities for which required functions have been secured/ extension of coastal preservation area," with respect to the facilities established before 1967"

Source: MLIT

3) Management on the strategic operation basis: "Selection and intensification," complex of facilities, disposition, utilization/exploitation, privatization, etc.

For the purpose of infrastructure development amid the severe fiscal constraint in this society of declining population and aging, it is required to invest policy resources in a prioritized manner, which means the process of their "selection and intensification" is indispensable.

More specifically, the criteria for "selection and intensification" were stipulated as follows in the "Interim review of the Infrastructure development Priority Policy Program" dated November 2011, and we continue working to move forward with the program formation.

- 1) Those likely to be unable to reduce large-scale or wide-area disaster risks unless development is implemented now;
- 2) Those likely to become extremely difficult to enhance the industrial and economical infrastructures as well as international competitiveness of the nation unless development is implemented now;
- 3) Those likely to significantly preclude the realization of "development of sustainable and vibrant national land and regions" unless development is implemented now; and
- 4) Those likely to be put in extreme danger in the future unless proper maintenance, management, and renewal measures are implemented now.

Under the significant direction of strategic infrastructural operation known as “selection and intensification,” we need to advance, as individual management strategies, the innovative approaches that are different from those in the past; namely more efficient infrastructure management through the introduction of new advanced technology, review of regulations and programs for that, as well as the establishment of new fund raising methods, etc. The major infrastructure management methods implemented so far include those of the designated administrator system, the comprehensive entrustment to private entity, the utilization and exploitation of the infrastructure by the private sector, the promotion of PFI, the consolidation of infrastructure, project coordination, wide-area coordination, privatization, etc. The following are their respective present statuses:

(a) The designated administrator system and system of comprehensive entrustment to a private entity

The designated administrator system is a system under the Local Autonomy Act, where a designated administrator (a juridical person designated by local government) shall perform development and management of a public facility on behalf of the local government with regard to public facilities intending to promote the welfare of the local residents. Private enterprises, various juridical persons and other organizations can be designated as a designated administrator, who shall comprehensively perform the maintenance, management, establishment of usage fees, etc., pertaining to the entire facility.

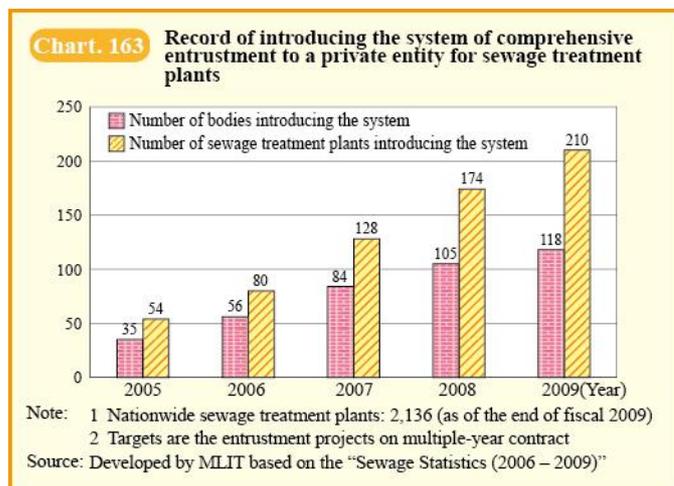
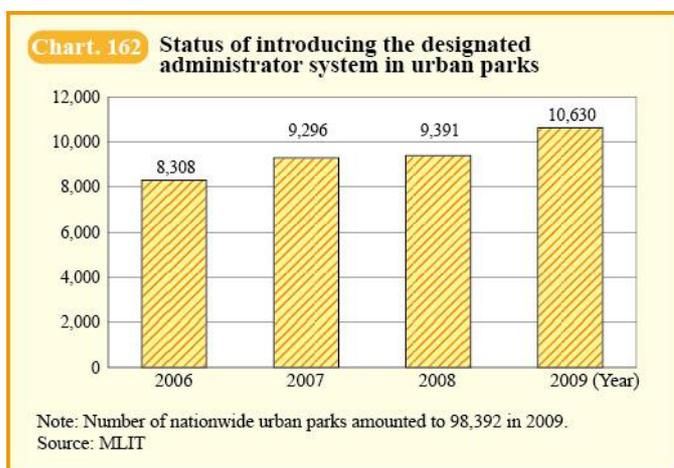
This particular system aims at improvement, etc., of user services and financial conditions through the adaptive operation of the infrastructure by using know-how held by private business operators, etc. Since it was introduced in September 2003, this system has been utilized in the management of public facilities such as urban parks, public housings, etc.

On the other hand, the system of comprehensive entrustment to a private entity is to provide services by entrusting a series of works to private businesses by the performance requirement order method, without providing details of business operations, so that the service can be provided efficiently by utilizing innovations of private businesses.

This has been utilized mainly in the maintenance and management of sewage treatment plants. The number of bodies implementing the system has been increasing year by year, amounting to 118 in fiscal 2009. In addition, approximately 10% cost reduction effect in average by the longer contract terms (about 90% is on 3-year contract (6-year the longest)) and by the fulfillment of know-how by private business. In recent years, also with regard to sewer pipeline facilities, aging of facilities has been advancing while municipalities are facing their tight state of finance and declining number of officers. Therefore, the needs for low-cost renovations utilizing the know-how of the private sector have increased. It is planned to implement in fiscal 2012 a model project under the system of the comprehensive entrustment to private entity in which the survey, repair, renovation, etc., will be ordered in a package, so that the advancement of, as well as the creation of guidelines for, the specific methods can be examined.

(b) Utilization and exploitation of infrastructure by the private sector

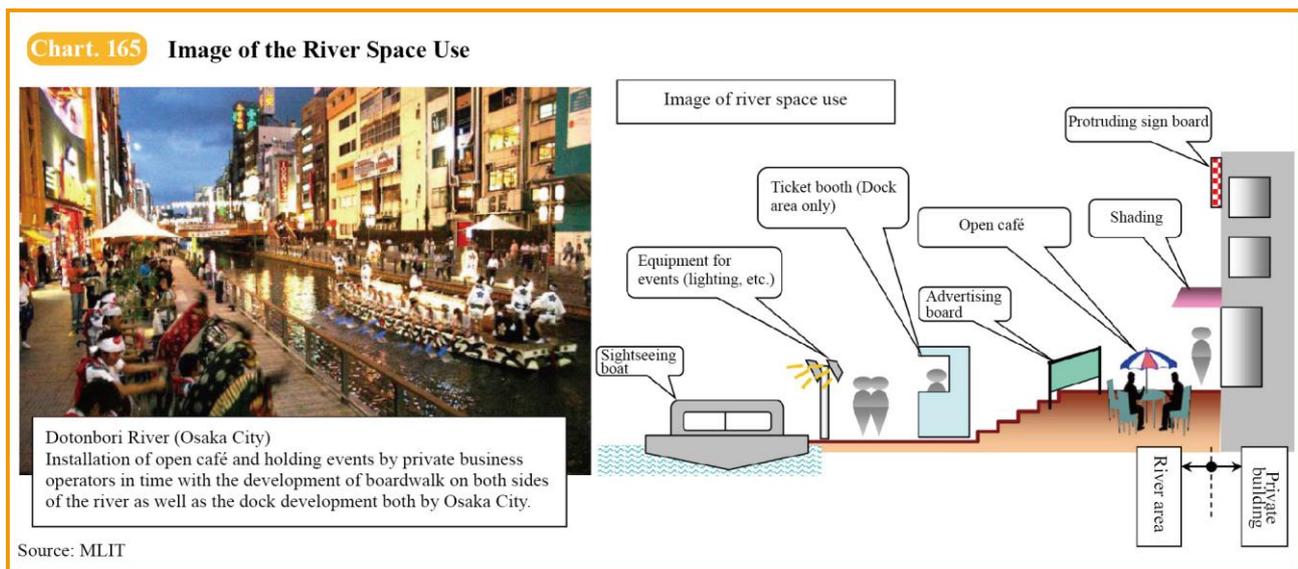
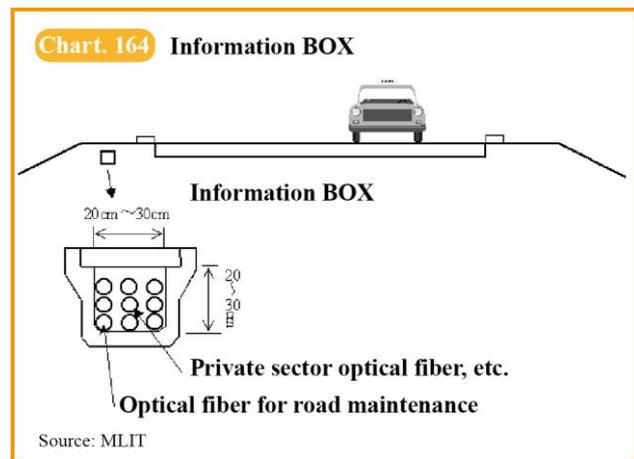
By opening the infrastructure to the private sector, methods to effectively use the existing stocks have been put into operation. For example, with regard to road spaces, opening to the private sector has been carried out, within the range approved based on their element of public nature, etc., such as using an area under the elevated structure as a parking area, in spite of restricting the use as a rule from the viewpoint of securing proper road management and favorable urban area, etc. The “Information BOX”, which is installed under the road for housing the optical fibers for road management, also has been opened to private telecommunication business operators unless it would interfere with facility management (approx. 18,000km opened by the solicitation held in fiscal 2011). Also as for the river spaces, the proprietary use was approved only for the cases where public entities such as local governments, public benefit service operators, etc., install facilities of a public nature or serving public interests, such as park, sports ground, bridge, power transmission line, etc. Since 2004 when deregulation was made on the proprietary use of full-riverbed area, as social experiments that is limited only to the designated areas (8 areas including the Dotonbori River and the Hori River), special provisions concerning proprietary use (deregulation) also started to be admitted in the case where a private business operator installs event facilities, dining facility on board, etc.



Later, based on the proposal on opening of the road space and river space made in the “Growth Strategy of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT)” formulated the Revising “Act on Special Measures concerning Urban Reconstruction” was enacted in October 2011 with regards to the road space, as a result of which the special provision of proprietary use of road for creation of liveliness and exchanges was introduced. For example, we can consider developing a new type of infrastructure and management that utilizes the profit return from the private sector, if the cooperation between public road project and its surrounding area development project by private sector is likely to be obtained, or using special provisions, etc., if it is likely to be able to create new business opportunities using urban road space, including general road, etc.

With regard to river spaces as well, starting from November 2011, it became possible to implement deregulation throughout the country without having a social experiment area designation. With this, diverse utilization of full-riverbed area according to local needs, such as needs for installing event facilities, open café, etc., became available, and so we shall advance urban and regional rehabilitation, etc., through the creation of liveliness on watersides and the development of attractive communities.

By ensuring the commercial use of administrative assets through deregulation of restriction on use of road/river spaces as well as the opening of such spaces to private sector, it will become possible for us to expect the effects such as the operation of infrastructure development and management utilizing the profit return from private sector, and the operation of new businesses, etc., which may lead also to the local revitalization.

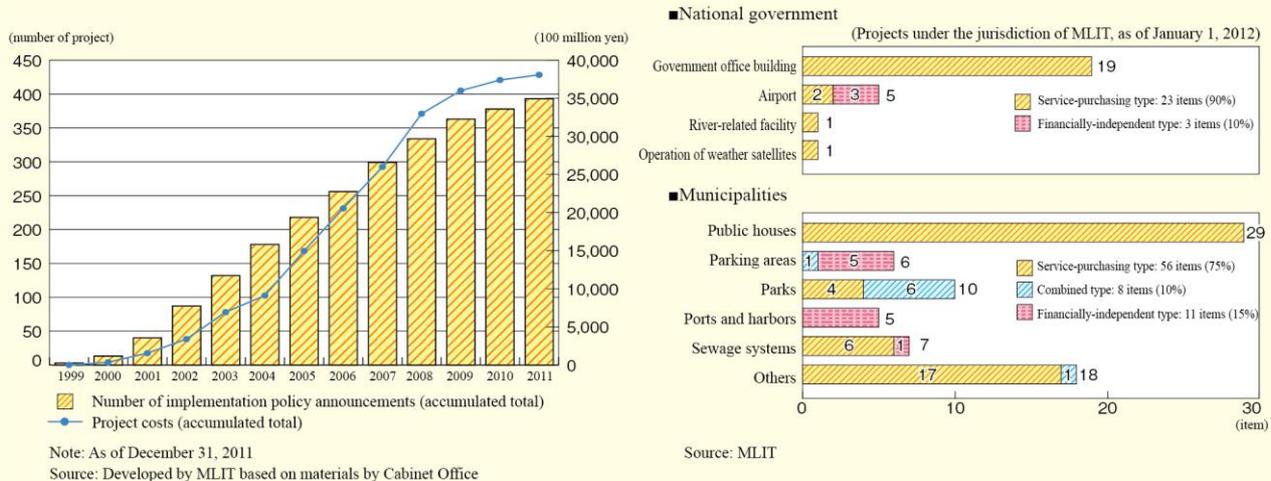


(c) Promotion of PFI

PFI (Private Finance Initiative) is a practice to carry out the construction, maintenance/management, operation, etc. of public facilities, etc., by utilizing private funds, management capability and technical capability of the private sector. In Japan, the utilization of private funds and know-how for public facilities/ infrastructures, etc., started in the privatization of NTT, JR. etc., in the late 1980s, and the PFI system was established by the enactment of “Act on Promotion of Private Finance Initiative (PFI Act)” in 1999. According to the Cabinet Office, the number of PFI projects that announced their implementation policies under the PFI Act amounted to 393, and the total project costs reached 3,807.4 billion yen, by December 2011.

Taking a look at the PFI projects relating to the Ministry of Land, Infrastructure, Transport and Tourism, which had already been implemented, the cumulative total number of implementation was 101 as of January 2012, with the substance of projects centering on buildings such as government buildings, public houses, etc., as shown in the graph.

Chart. 166 Change in the number and cost of PFI projects (accumulated total)



Column Development of Public Housing by PFI

In the development of public housing by PFI scheme, a greater efficiency is secured by conducting the reorganization, intensification, and redundant-area utilization, etc., at the time of development.

In the Kamiyasu Jutaku in Hiroshima City, Hiroshima Prefecture, it was decided to advance development and operation of the land, the public housing construction as well as the redundant-area utilization in an integrated manner by PFI scheme at the time of housing reconstruction work under the prefectural housing integration and abolishment project. The business operator would develop the land and construct the houses, and at the same, in an integrated manner, construct the facilities such as welfare facility for the elderly, day-care center, etc., within the project site by utilizing the redundant area. Because of such a kind of scheme like this, it has become possible to carry out the efficient development through the utilization of planning and technical capabilities held by the private sector.



(d) Infrastructure facility complex, intensification, and coordination

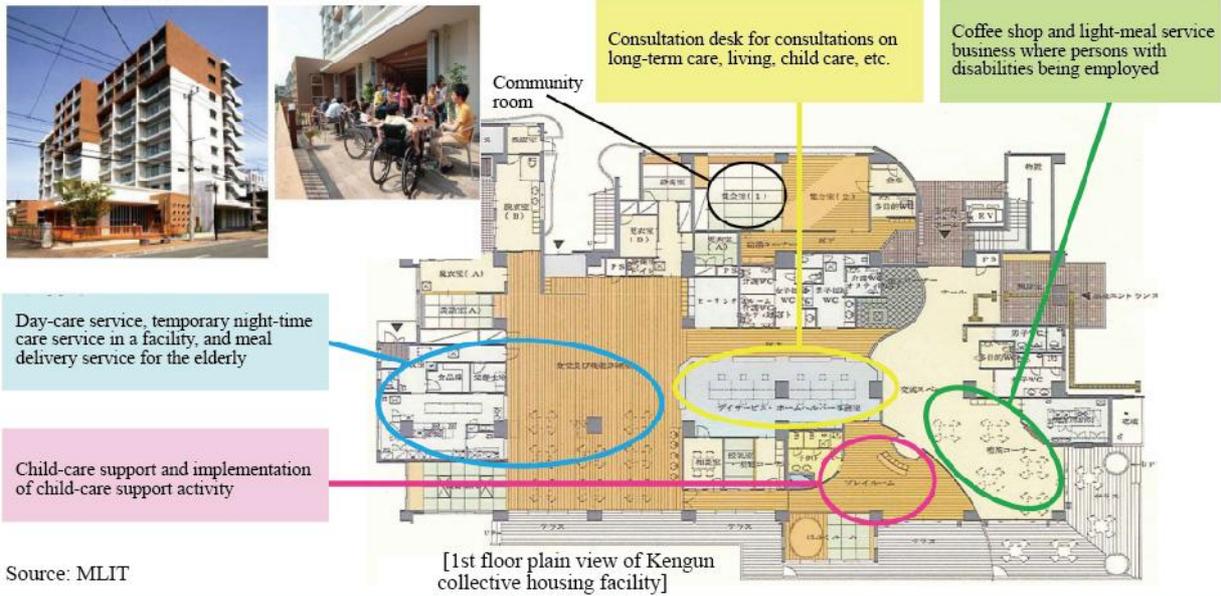
At the time of renewing the existing infrastructure, it is also important to secure the efficiency improvement as well as the intensification. In order to provide more satisfactory administrative services within a limited funding, it is required first to convert facilities according to changing social environment as well as needs of users and then develop facilities that can provide multiple functions.

In the local governments such as cities, towns, villages, etc., the sorting out and combining of the public facilities such as cultural facilities, community centers, etc., have been progressed (Saitama City, etc.). Also in any specific cases of national infrastructures, the flexible response according to local needs is required, wherever possible; such as those through the integration, the complex, and the efficiency improvement, etc., by coordinating with other business operators.

In the case of public housing, for example, complex and intensification have been progressed. According to the Basic Program for Housing (National Program) decided at the cabinet meeting in March 2011, it is targeted to improve the status of building the medical and welfare service facilities, child care support service facilities, etc., within a public collective rental housing facility (with 100 or more units) from 21% in 2009 to 25% in 2020, in terms of ratio to total. Some municipalities implement the reorganization and intensification on the occasion of their reconstruction of the public housing facilities. Taking a look at the change in the number of managed house unit in public housing facilities, the number is decreasing every year from the peak of about 2.19million units in 2005 to about 2.17million units in 2010, which means the decline of about 20,000 units in 5 years.

Chart. 167

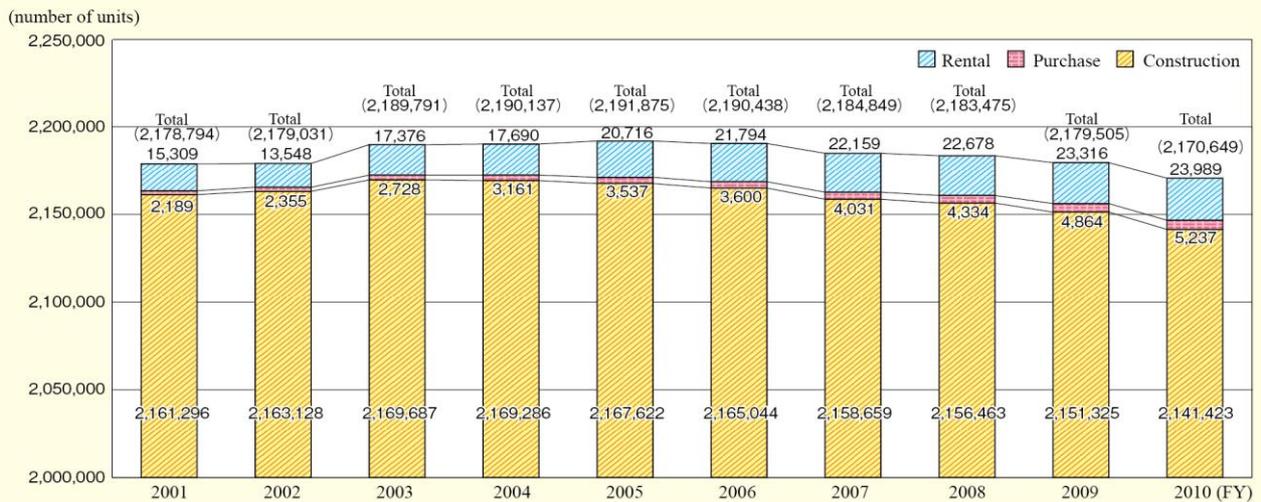
A case where a community welfare and exchange base being developed on the 1st floor of prefectural housing facility in time with the reconstruction of the said housing facility (Kengun Public Collective Housing Facility (Kumamoto Prefecture))



Source: MLIT

Chart. 168

Changes in the number of house unit managed in public housing facilities



Source: MLIT

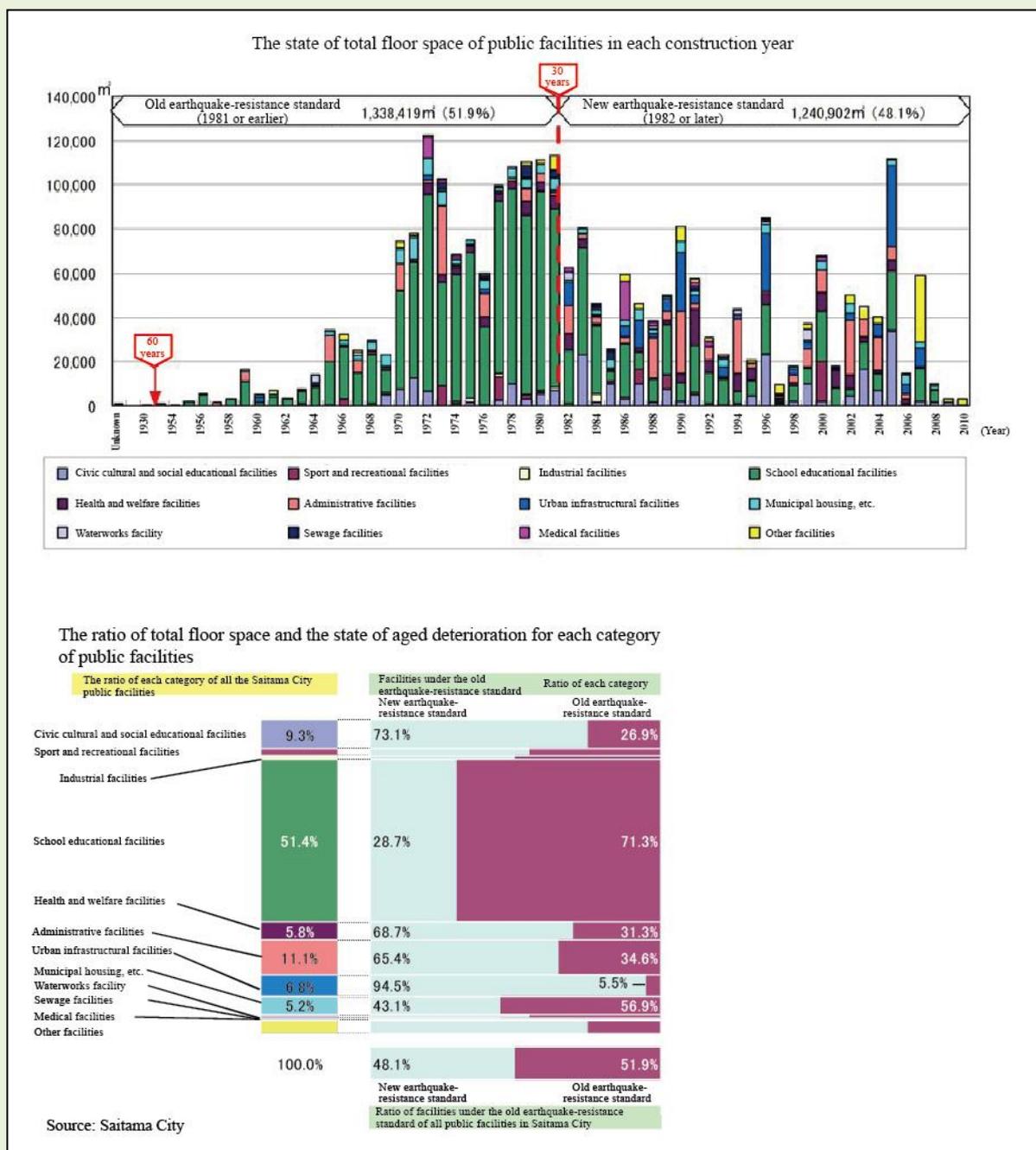
Column Public Facility Management in Saitama City

The city of Saitama formulated and announced the “Saitama City Public Facility Management Program” in June 2012 for the purpose of promoting effective as well as efficient management and operation for all public facilities.

As an ordinance-designated city formed by merger of 4 different old cities, the Saitama City has many public facilities (total number of facility: approx. 1,700; total building floor space: approx. 2.6million m²), and most of them were constructed within the two decades from 1960s. Of these, over 30-year old facilities account for approximately 52%, which causes a concern that in future the city is expected to hit by a wave of large-scale renovations and reconstructions. Because of this, the renovation and renewal costs would increase significantly. If they are to keep these existing facilities as they are, it would incur average about 15.5billion yen annual deficit for 40 consecutive years according to the city. In addition, sharp increase of aging population is expected in future, considering the characteristics of the city’s demographic structure. Therefore, the management that can respond to the changing demands and needs is required for the public facilities.

In the Program, the following policies were held as the overall target; [Three principles on public facility building structures] – “Not to do any new development as a rule (To do within the range of volume restrictions),” “Any facility requiring renewal (reconstruction) shall be renewed or reconstructed into a complex facility,” and “To reduce overall volume of facilities (overall floor area) (Approx. 15% reduction for 40 consecutive years required.); [Three principles on the infrastructure] – “To keep the current investment amount (general account budget),” “To reduce life cycle costs,” and “To efficiently respond to new needs.” In addition, policies for each facility field also were provided in the Program. And in the program, it is said that a special section in charge of public facility management shall be established for the purpose of promoting the program under the top management.

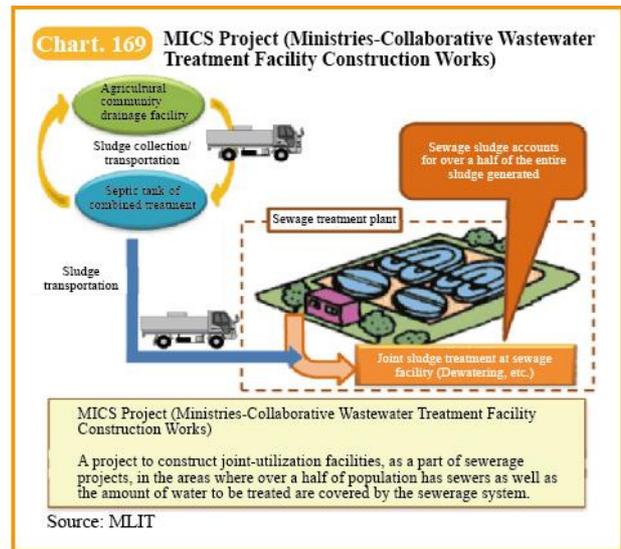
To be more specific, such section will formulate action plans by taking into account the current state as well as the problem of facilities through the development of database on the state of public facilities, create white paper, etc., and carry out management accordingly. In each annual white paper, monitoring will be conducted based on indicators such as the state of development, use, operation, costs, etc., of the facilities. And the white paper will be made public and the management that takes into account the awareness of issues shared with citizens, private business operators, etc., shall be conducted accordingly.



In sewage treatment, the intensification, the coordination among projects, and the wide-area coordination have been promoted with an aim to achieve efficient development, maintenance as well as management of the facilities. As for connecting the sewage system with the drainage facility of agricultural and fishery communities, for example, it is currently underway at 123 places across 33 prefectures as of the end of fiscal 2010. This accounts for approximately 5% of all 2,136 sewage treatment facility places existed (FY 2009).

In addition, the Ministries-Collaborative Wastewater Treatment Facility Construction Works (MICS), that jointly carries out the treatment at sewage facilities by pursuing the intensification, have been implemented at 81 places across 28 prefectures (excl. Tokyo) with regard to the sludge generated in each wastewater treatment facility (sewage, agricultural community drainage facility, septic tank of combined treatment, etc.) as of the end of fiscal 2010.

In addition, the specific sewerage facilities joint construction work (SCRUM) through coordination among multiple municipalities has been implemented at 28 places across 14 prefectures (excl. Tokyo) as of the end of fiscal 2010.

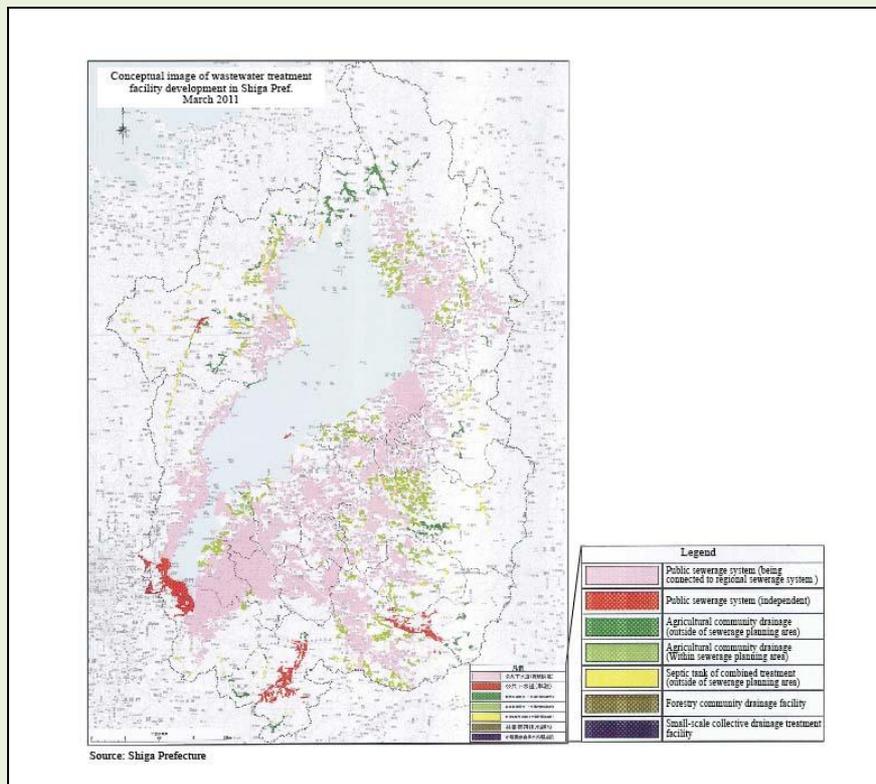


Column The Shape of Future Wastewater Treatment Facilities

So far with regard to the wastewater treatment facilities, the development work has been conducted in the fields such as sewage (MLIT), agricultural community drainage (MAFF), septic tank (MOE), etc.

In future, in addition to implementing the systematic maintenance and management works, including the implementation of measures against aging of these facilities, it will become more important to have further discussions on the integration, the wider-range covering, the coordination with others, etc., based on local characteristics in each prefecture or municipality.

So far in Shiga Prefecture, for example, improvement of efficiency in wastewater treatment facility has been conducted by connecting the sewerage system with the agricultural community drainage in Aisho Town and Nagahama City.

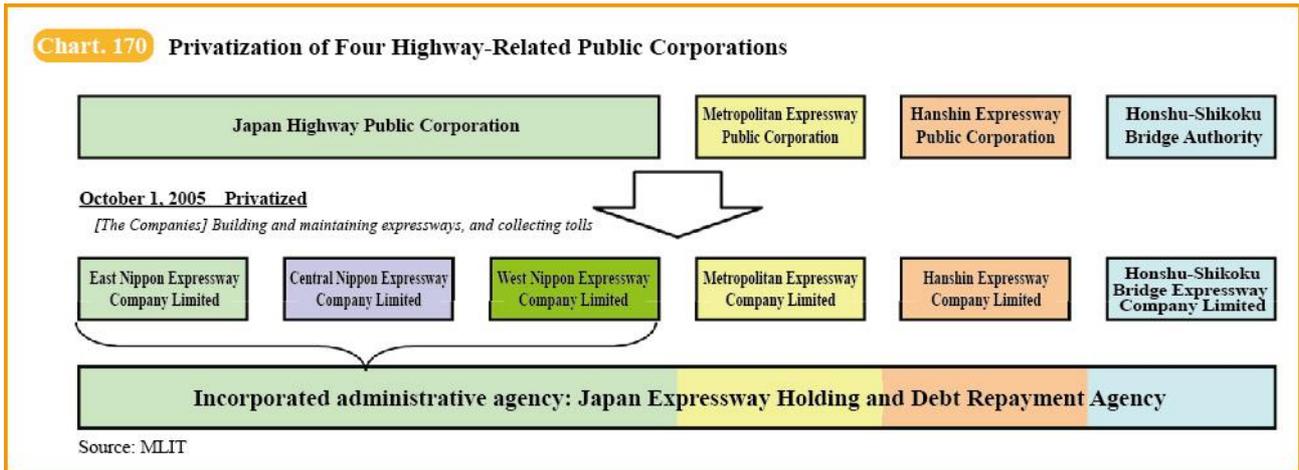


(d) Expansion of privatization, etc.

As for the infrastructure development/ privatization of implementing body have been carried out also in the past aimed mainly at the cost reduction and the service improvement etc. through the introduction of management know-how of the private sector.

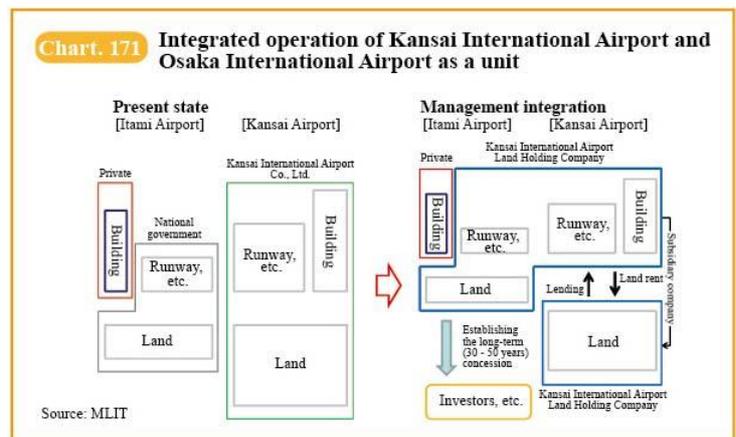
As for the field of roads, the four highway-related public corporations were privatized in 2005. They are making efforts for secure debt repayment through the implementation of highway business activities by the four Nippon Expressway Companies and the Japan Expressway Holding and Debt Repayment Agency, as well as for diverse service provision through efficient operation by applying know-how of the private sector.

In the airport management field, the New Kansai International Airport (fully owned by the state) was to be established on April 1, 2012 under the “Act on integrated and efficient establishment and management of Kansai International Airport and Osaka International Airport as a unit” enacted in May 2011. The Osaka International Airport, which is controlled by the national government, will be operated together with the Kansai International Air Port under the said new company as the same one unit starting from July 1, 2012.



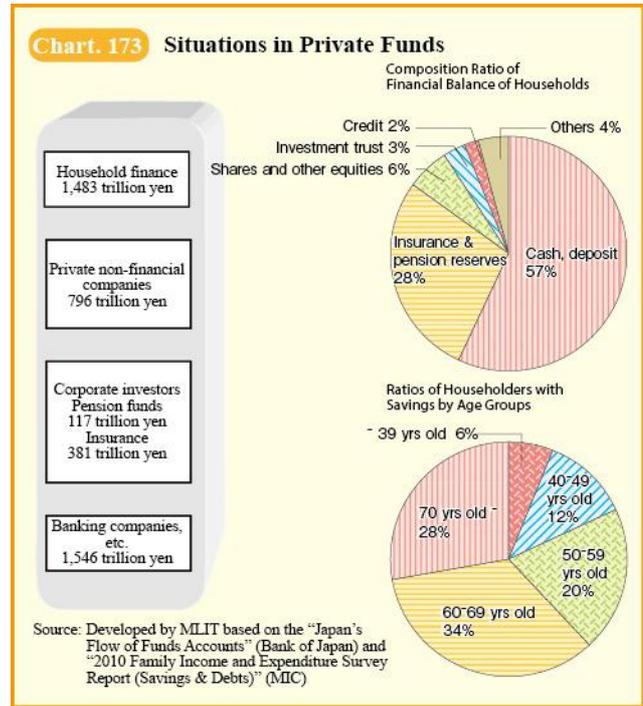
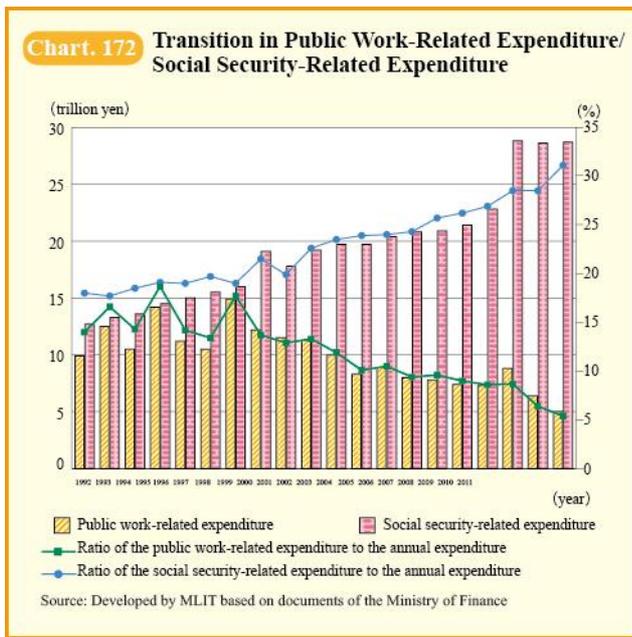
In managing and operating the specified foreign trade terminals, it was aimed to improve efficiency through changing then Port Terminal Corporations into stock companies. And the new Port Terminal Corporations, the resulting stock companies, started undertaking comprehensive management and operation of the foreign trade container terminals in Tokyo Port, Osaka Port, and Kobe Port respectively so far.

(Refer to 7 below for the future efforts pertaining to the promotion of PPP/PFI with respect to the airport management as well as the port and harbor management.)



7 Strengthening wide-ranging coordination, including public-private coordination and wide-area coordination

In the face of our nation's rapidly aging population, the share of social welfare costs of our national spending is increasing each year, while the share of expenses for public works projects is declining. Also while the financial constraints on the government's part are aggravating, the household sector still has huge personal assets. The status of holding of financial assets of 1,488 trillion yen in the household sector shows the high share of cash and bank deposit (57%), which are held mostly by people who are 60 years old or over (approx. 60%). In order to achieve sustainable growth by enhancing the vitality of our national land and regions despite this extremely tight fiscal situation, it is indispensable for us to steadily develop truly necessary infrastructures by utilizing the wisdom and funds of the private sector.



(Increase in Needs for PPP/PFI)

In addition to the projects executed by national government, subsidized projects of local public authorities, and local independent projects that have been the major implementation methods of the public works, developing the new environments is necessary to grow the PPP (Public-Private Partnership)/PFI (Private Finance Initiative) into the "third column" where private funding, knowledge and human resources are utilized. The PPP/PFI projects can mainly include the comprehensive private consignment, the designated administrator system, the PFI method, and the concession system. MLIT, in the "MLIT Growth Strategy Council Report" drawn up in 2010, mentions formation/implementation of specific projects

Chart. 174 Major PPP Methods

Method	Outline	Facility ownership	Funding	Example of applied field
Comprehensive private consignment	Management and operation of public facilities, etc., are comprehensively outsourced to the private sector.	Administration	Administration	Sewage
Designated administrator system	System aiming to improve quality of public services for public facilities through use of know-how of the public sector, etc.	Government	Government	Ports and harbors
DBO method	Method in which the public sector provides for financing and design, construction and operation are outsourced to the private sector	Government	Government	Sewage
PFI method	Method to perform construction, maintenance/management, operation, etc. of public facilities, etc. by using private funding and managerial/technical capabilities	Government/private	Private	Public housing
Concession method	Method to grant the long-term infrastructure business right to the private entities without transferring the ownership of the public facilities	Government	Private	Airport (scheduled)

Source: MLIT

emphasizing airports, harbors, etc. as well as proactive supports to commercial use of administrative assets. Further with regard to the cost of MLIT-related PPP/PFI projects, a total amount of 2 trillion yen is newly subject to implementation up to 2020. In response to the MLIT'S growth strategies, in the ordinary Diet session of 2011, the "Ports and Harbor Act" was amended to establish the port management company system, the "Act on the Integrated and Efficient Establishment and Management of Kansai International Airport and Osaka International Airport" was established for concessional use of Kansai and Osaka Airports, and the Act on "Special Measures Concerning Urban Renaissance" was amended.

Promotion of use of private fund is stated also in the government's New Growth Strategy (approved in cabinet meeting on June 18, 2010), specifically including:

- To aim to expand the PFI projects by at least 10 trillion yen over 11 years till 2020 (more than twice the value of the conventional scale of projects).
- In order to realize the above, to implement an expansion of the PFI system during FY2010 including, for example, introduction of the concession method.

Chart. 175 Excerpt of New Growth Strategy (Approved in Cabinet Meeting on June 18, 2010) IV Tourism & Regional Revitalization Strategy



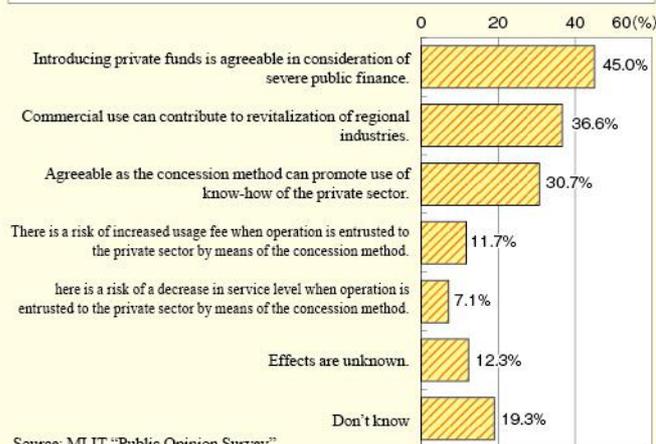
Based on the policies in the New Growth Strategy, the “Act on Promotion, etc., of Public Facility, etc., through Utilization of Private Finance, etc., (PFI Act)” was amended in May 2011. Under the PFI Act after amendment, facility operation by way of the concession method is now available, rented accommodations, vessels, airplanes, etc., were newly added to the target facilities, and the system which allows private operators themselves to plan PFI projects to propose to the government has been introduced.

According to the concession method, the operation right of a facility can be granted to the private sector over a long time without transferring ownership of the facility to the private sector, where the business operator can freely decide the actual services, usage fees, etc., of the facility. This allows the business operators to run the facility with high flexibility, realizing setting of lower fees and high-quality service through management efforts of the private sector.

High expectations toward private fund and know-how are also seen in the public opinion survey of this time, in which the 45% responded “Introducing private funds is agreeable in consideration of severe public-finance conditions” and 30.7% responded “Agreeable as the concession method can promote use of know-how of the private sector” with regard to introduction of the concession method.

Chart. 176 Concession Method

Concerning infrastructure (airports, ports/harbors, etc.), there are some movements that the private sector sets the operating rights by means of the concession method. Please tell us your viewpoints by selecting from the items below. (Choose at most 3.)



(Realization of Concession for Kansai International Airport and Osaka International Airport)

As for Kansai International Airport and Osaka International Airport, New Kansai International Airport Co., Ltd., was established on April 1, 2012, which starts to operate both airports in an integrated manner on July 1, 2012. The company, by increasing the business value of both airports and realizing acquisition of the operation right of public facilities, etc., (concession agreement) as early as possible, aims at early repayment of the debt of Kansai International Airport in a steady manner and also aims at contributing to strengthening Japan’s international competitiveness as well as revitalization of the Kansai regional economy through appropriate and effective use of the airports.

(Promotion of Airport Management Reforms)

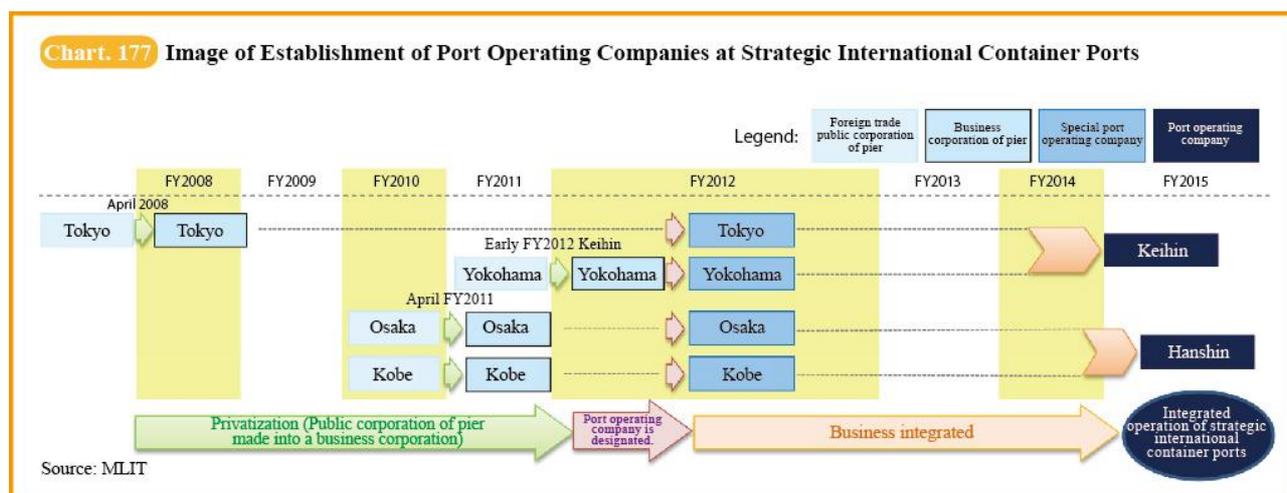
As for the national government administration airports (27 airports excluding Osaka International Airport), a report was also produced in July 2011 by the “Investigation Commission on Airport Management”. The report posed the following two problems: (1) As the incomes such as the landing fee are pooled and managed, no improvement is expected in management efficiency. (2) Because of separation of main operators, in which runways, etc., are managed by the national government, while the airport buildings, etc. are run by the private sector, integrated and agile operation of the airport as a whole has not been attained.

With an aim to solve these problems and to bring out the prime roles of airports to the full extent, the report emphasized the community-based airport management by realizing management by each individual airport, and at the same time, agile operation of each airport by integrating its management (including also that of airport buildings) by using business capabilities of the private sector.

As a specific effort with regard to the national government administration airports, etc., a bill (“Legislative Bill for Management, etc., of National Government Administration Airports, etc., Through Utilization of Private Sector Business Capabilities” Draft) to enable consignment to the private sector through use of the concession system of public facilities, etc., was submitted to the 180th Diet Session in March 2012. It is scheduled that, as soon as enactment of the bill, an execution policy (basic policy) on reforming management, etc., of the national government administration airports be formulated without delay so that the airport management reform for 27 airports can be realized by around FY2020.

(Introduction of the Port Operating Company System)

In December 2011, the port operating company system to cover the integrated management of ports/harbors combining the private sector perspective was established, aiming to realize strategic and efficient port operation. Such port operating companies are to carry out operation and port sales, etc. of major container berths, port sales, etc., in an integrated manner. The national government as well as the port management bodies provides comprehensive supports by way of lending of port facilities, lending of interest-free loans, special taxation measures, etc. In FY2012, efficient port operation by port operating companies is expected to start at Tokyo Port, Yokohama Port, Kawasaki Port, Osaka Port, and Kobe Port one after another.



Column

Efforts Related to International Strategic Ports ~ Promoting Increased Efficiency in Port Operation from Private Sector Perspective ~

Along with globalization of economy and the economic growth in East Asia, Japan’s container handling volume has been increasing. Meanwhile, among the container goods from/to Japan, there is a rapid increase of those to be exported/imported to/from Europe, the US that are transhipped at some other ports in East Asia such as Busan Port, etc., posing a concern if the relative significance of Japanese ports may become adversely affected.

In the case where the service-level improvement/cost reduction of Japanese ports will fall behind the other East Asian ports, it may result in a decrease in the number of port calls by European or US ships on major service routes, adversely affecting the economy of our nation.

In an effort to realize strategic and efficient port operation through further increasing port operation efficiency by introduction of private sector perspectives in addition to reinforcement of port functions and to sustainably develop Japan’s economy, the “Ports and Harbors Law” was amended in March 2011 by which the port operating company system was established. The ports operating companies are expected to be engaged in integrated operation of ports and harbors by maintaining public responsibility while adopting private sector perspectives. They are also expected to carry out operation of major container terminals as well as port sales, etc. in an integrated manner, for which governmental support measures such as special taxation measures and provision of interest-free loans are taken.

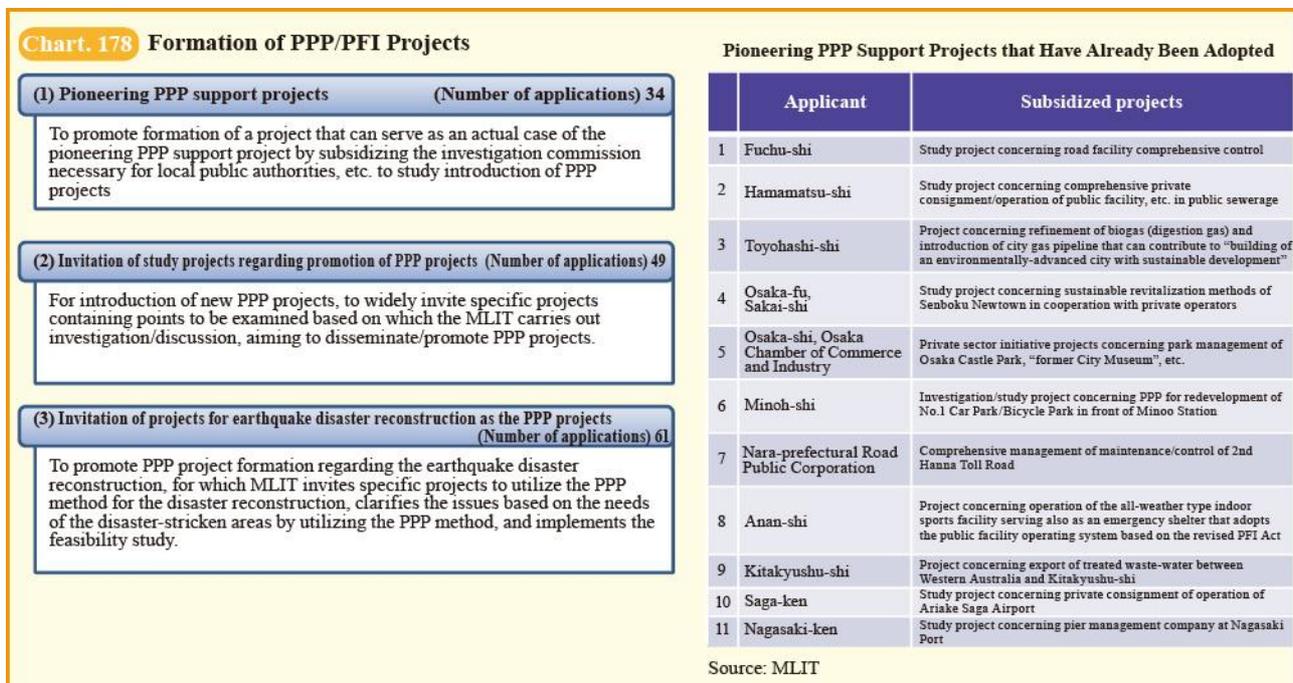
With regard to the Strategic International Container Ports (Hanshin Port, Keihin Port), arrangements are under way among the concerned parties toward introduction of the port operating company system within FY2012.



(Formation of PPP/PFI Projects)

With the aim to expand projects based on the PFI system, to develop the new PPP/PFI system and to promote formation of specific projects, during May to June 2011, the MLIT invited public-private partnership projects from local public authorities and private sectors.

The targeted categories include the following three: (1) Pioneering PPP support projects, (2) Invitation of study projects regarding promotion of the PPP projects, (3) Invitation of projects for earthquake disaster reconstruction as the PPP projects. A total of 144 applications were collected.



A total of 11 projects were adopted as the pioneering PPP support projects, for which investigations and studies were carried out by each concerned local public authorities with regard to introduction methods, etc., of PPP/PFI method for each concerned public facility such as public sewerage and toll road.

As for the study projects regarding promotion of PPP projects, examination items were set based on the applications and studies were conducted regarding managerial issues of operation of public facilities, etc., effects of comprehensive management of multiple public facilities by PPP, and other related matters.

With regard to the earthquake disaster reconstruction projects by PPP, 11 specific projects were subject to investigation and study. They included, for example, the study regarding disaster restoration housing development, etc., by PPP in consideration of regional characteristics in Fukushima-ken, the study regarding a tsunami evacuation mall development method through use of PPP in Ishinomaki-shi of Miyagi-ken, and the study regarding building a temporary community by PPP for restoration of disaster-stricken areas in Yamada-machi of Iwate-ken.

(PPP/PFI Widely Utilized in Overseas Countries)

In overseas countries starting in the UK as its birth place, introduction of PPP/PFI has been proactively promoted to deal with the issue to address both the public investment and the fiscal soundness. Especially, the infrastructure fund is widely adopted overseas as a fund procurement mechanism for infrastructure improvement. The infrastructure fund is a type of fund in which money is raised from investors in a form of investment in infrastructure such as roads, railways and ports and harbors. The total value of fundraising amounted to 44.2 billion dollars in the peak year of 2007. Although the amount has dropped due to the economic crisis, it is once again showing signs of recovery after 2010. Because investment in infrastructure involves a relatively small risk and is suitable for long-term investment, fund operation by pension and insurance institutions by means of infrastructure fund has been expanding in Australia, Canada, UK, etc.

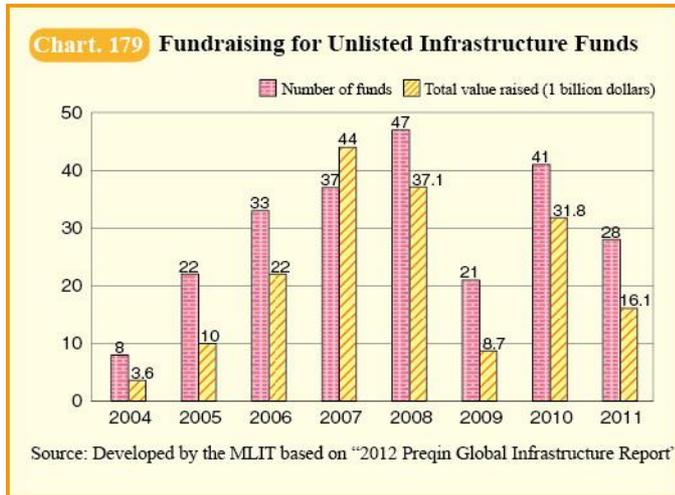


Chart. 180 Infrastructure Investors' Ranking (2010)

Rank	Investor	Location of head office	Investment amount for the past 5 years (million dollars)
1	Macquarie Group	Australia	30,655.0
2	Goldman Sachs	USA	9,100.0
3	Alinda Capital Partners	USA	7,000.0
4	Industry Funds Management	Australia	7,000.0
5	Ontario Municipal Employees Retirement System	Canada	6,221.9
6	Caisse de dépôt et placement du Québec	Canada	6,110.9
7	Brookfield Asset Management	Canada	5,777.0
8	Global Infrastructure Partners	USA	5,640.0
9	Ontario Teachers Pension Plan	Canada	4,862.2
10	Highstar Capital	USA	4,300.0
11	Canada Pension Plan Investment Board	Canada	4,250.0
12	Morgan Stanley	USA	4,000.0
13	Arcus Infrastructure Partners	UK	3,564.4
14	Citi Infrastructure Investors	USA	3,400.0
15	ABP	Netherlands	3,190.8

Source: Developed by MLIT based on "The Infrastructure Investor 30 2010"

There are about 700 PFI projects (reported to the HM Treasury) that were contracted by November 2011 in the UK, whose business asset value amounts to about 540 billion pounds (approx. 7 trillion yen)

In respect of the set period, "20 years or more and less than 40 years" accounts for 90% and, by category, the Department for Education and the Department for Health account for 50%.

Further in November 2011, the British Government concluded an agreement with two pension funds in the UK (the National Association of Pension Funds and the Pension Protection Fund) to perform environment improvement such as building the PPP platform that encourages new investments in infrastructure. The government also set the target of the additional investment to 20 billion pound (approx. 4 trillion yen), indicating further expansion of PFI projects.

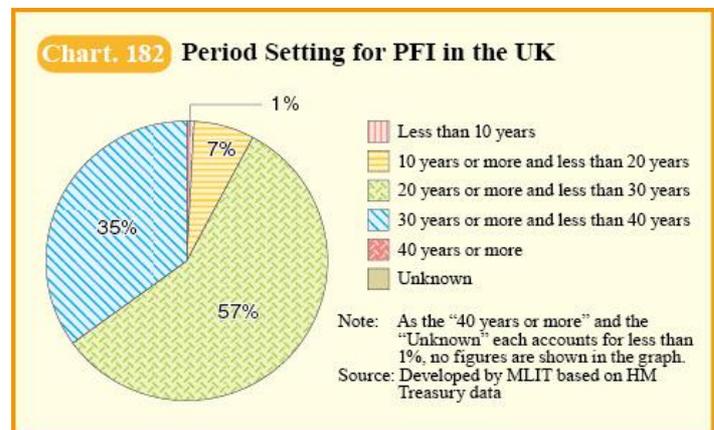
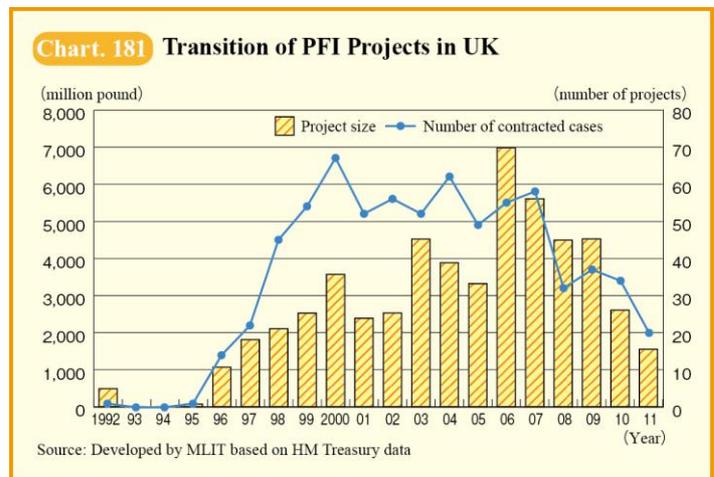
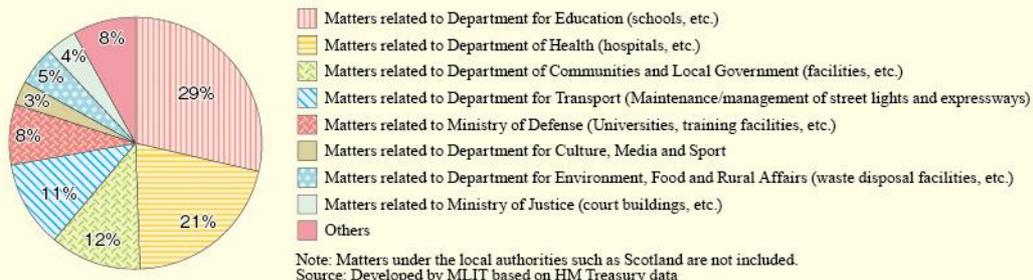


Chart. 183 Number of Projects by Category Implemented by PFI



Column Current States of PPP/PFI Introduction in Other Major Countries

The progresses of PPP/PFI projects in other major countries are as follows:

AUSTRALIA: Utilization of PPP in Australia started with the improvement project of Sydney Harbor Tunnel (tunnel passing under Sydney Cove) by its contract concluded in 1989. In 2000, the State of Victoria introduced the policy framework of “Partnership Victoria” and, henceforth, many states and Territories introduced the PPP policies. Finally in 2008, the Council of Australian Government (COAG) approved to set up Infrastructure Australia Committee in 2008 and the Committee drew up the “National PPP Guideline: Policy Framework” within the same year, based on which the PPP policies have been promoted.

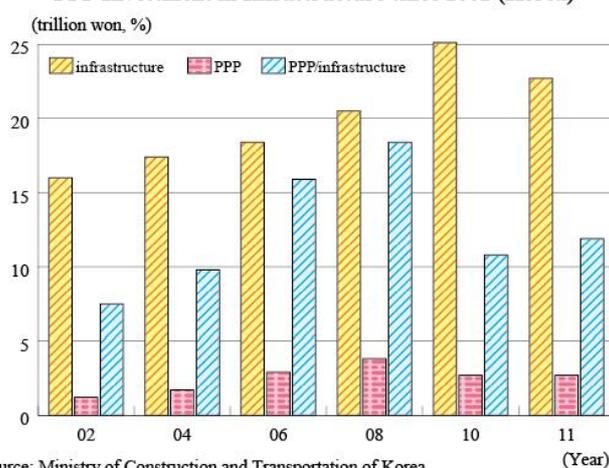
Korea: In 1994, with the aim to solve financial deficiency due to rapid growth of welfare needs, Korea established the PPP Act. In 2005, with the aim to assist the ordering parties, the “Public Facility Management Center” was set up as an auxiliary organ of the research institute (Korea Development Institute) under the Ministry of Strategy and Finance (ministry similar to MOF of Japan). This center now provides each ministry or agency and local authorities with assistances of professional expertise (assistance etc. regarding implementation of feasibility studies, evaluation of proposals of tender participants, etc.) Since 1994, approximately 600 PFI projects have been carried out, amounting to about 85 trillion won (approx. 6.2 trillion yen). While PPP accounted for about 18% of the total infrastructure budget in 2008, the ratio of PPP has then declined. The project categories include roads (41%), railways (17%), education (9%), and ports/harbors (9%).

PPP Investment in Infrastructure Since 2000 (Australia)

	Number of projects	Project value (million AUD)
Australian government	2	706
Australia Capital Territory	0	0
New South Wales	16	8,000
Northern Territory	1	600
Queensland	2	2,500
South Australia	1	40
Tasmania	1	90
Victoria	18	6,000
Western Australia	1	200
Total	42	18,136

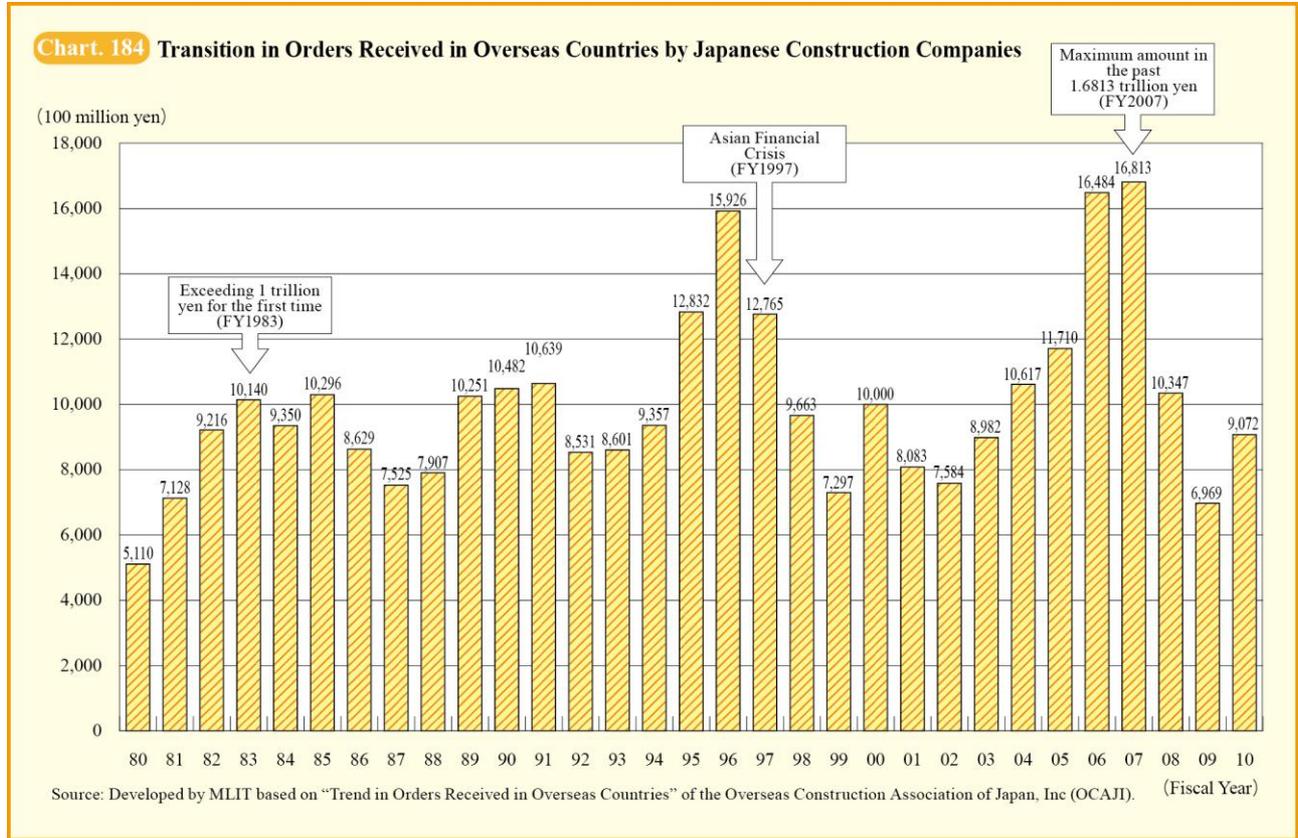
Note: Data up to 2009 for Victoria State. Data up to 2006 for the other states
Source: OECD (2010) “Dedicated Public-Private Partnership Units”

PPP Investment in Infrastructure since 2002 (Korea)



(Overseas Expansion in Infrastructure by PPP)

While the domestic markets of construction and transportation industries are on decreasing trend in a medium- and long-term viewpoint, large demands for infrastructure improvement continues in Asian regions, etc. Promoting the PPP overseas projects to respond to these demands is regarded as an important measures in the New Growth Strategy, for which comprehensive and strategic assistances have been provided from the conceptual stage of a project to the ordering and implementation stages, including sales promotion by top-level persons, holding of various joint committees, personnel training, and assistance for risks that are difficult to be dealt with by individual companies.



Further with the aim to promote efforts toward overseas expansion of infrastructural projects by PPP, joint councils were set up and held consisting of members from private companies, local public entities, institutions concerned and relevant ministries and agencies. To date, the "PPP Council for Overseas Water Infrastructure", "PPP Council for Overseas Road", "Council for Promotion of Overseas Railroads", "Council for Overseas Port Logistics Projects", and "Japanese Conference for Overseas Development of Eco-Cities" were held, attended by participants from many countries mainly from East Asia.

Column Infrastructural Expansion Projects in India

In India in recent years, while economic liberalization and reform are steadily in progress with high economic growth, delay in infrastructure development has been pointed out. The assistance in infrastructure development in India is important not only for India's economic growth in future but also for sustainable growth of the entire Asia including Japan. In this perspective, the MLIT is addressing various issues, jointly with relevant ministries/agencies, concerned organs and private companies.

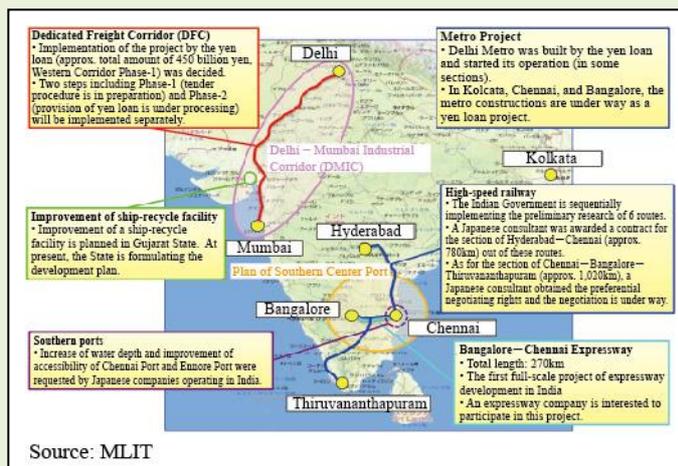
In January 2012, the Minister of MLIT visited India and had talks with the concerned ministers for his top sales. In the talk with the Minister of Railways, it was agreed that a conference group of administrative vice-minister level be set up to accelerate cooperation between both countries in the field of high-speed railway. In addition, the high-speed railway seminar was held in Delhi jointly by the government and the private sector, where Japan's outstanding technologies of Bullet trains and high-speed railway, effects of improvement of high-speed railways, etc. were introduced with the intention to contribute to development of the high-speed railway network in India. Further in the talk with the Minister of Railways, an agreement has been reached as to the content of a memorandum regarding cooperation in the field of railways.

MLIT will continue to assist the Japanese private companies in the field of overseas development in India through multilateral approaches based on joint cooperation of the relevant ministries/agencies, concerned organs and private companies.

Minister Maeda of MLIT and the then Minister Mr. Trivedi, Ministry of Railways, Government of India



Source: MLIT



Column Infrastructural Expansion Projects in Vietnam

Under the Doi-Moi (renovation) policy that started in 1986, Vietnam has pursued the market-oriented economy and opened the country to the outside world, achieving high growth by marking the average economic growth rate of 7.26% during 2000 to 2010. Vietnam requested Japan for cooperation in the projects such as North-South Express Railway and North-South Expressway, etc. In response to this, Japan is assisting in these projects and also promoting other various infrastructure projects such as Lack Huyen Port project. On November 2, 2011, at the welcome breakfast for the Prime Minister of Vietnam held by the Minister of MLIT, opinions were exchanged about cooperation in infrastructure improvement in various fields.

The various infrastructural projects now in progress in Vietnam specifically include the following:

(1) North-South Express Railway Plan:

The planned railway covers a total length of 1,600km between Hanoi and Ho Chi Minh. With regard to this plan, in December 2009, a feasibility study (F/S study) was requested to Japan from the Vietnam side regarding the 2 preferential sections (Hanoi-Vinh, Ho Chi Minh-Nha Trang). In May 2010, the Minister of MLIT visited Vietnam and agreed with the Vietnam side to discuss feasible measures for these 2 sections. At the Japan-Vietnam Summit Meeting in October of the same year, the Prime Minister expressed to the Vietnam side that the implementation of an F/S study for the 2 sections was decided and the F/S study was started in May 2011 by (Independent Administration Agency) Japan International Cooperation Agency (JICA). MLIT is also supporting this study by participating in the internal support committee consisting of outside experts that has been set up for this study. The final report on the results of this study is expected to be submitted to Vietnam in March 2013.

(2) Vietnam North-South Expressway:

The aim of this project is to build an expressway connecting Hanoi and Ho Chi Minh. A Japanese expressway company is expressing their interest in participating in the project and the MLIT also provides supports toward the participation in the project. One of the specific supports is the “Seminar on Vietnam Expressway” based on the “Memorandum Regarding Cooperation in the Field of Railways” concluded with the Ministry of Traffic and Transportation of Vietnam, which is held once a year alternatively in Japan and in Vietnam to introduce Japan’s experiences, technologies, and systems as well as to exchange opinions. In August 2011, the 5th seminar was held in Da Nang, Vietnam. Further the MLIT is also working on top sales, for example, by inviting the Vice Minister of Traffic and Transportation of Vietnam in March 2012 to exchange opinions with the MLIT Parliamentary Secretary, Vice-Minister.

(3) Lack Huyen Port Project:

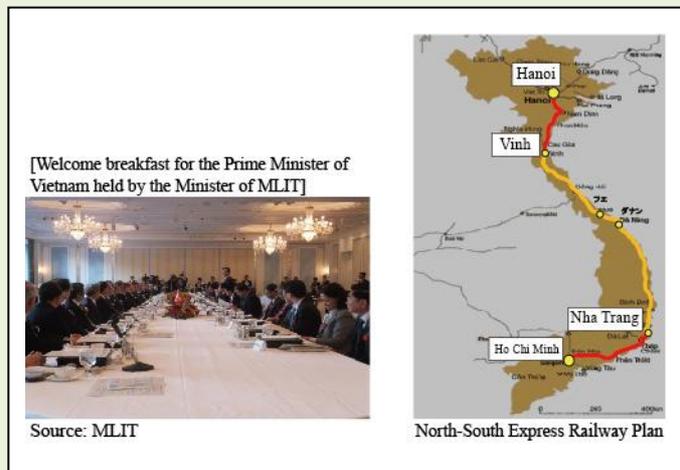
The aim of this project is to build a new container terminal off the Port in order to address increasing cargo demand at Hai Phong Port, the largest port in the northern Vietnam.

This project is jointly promoted by PPP between Japan and Vietnam, in which the land development such as reclamation is carried out by means of public investment, while improvement of facilities such as buildings as well as terminal operation are intended to be carried out by a joint venture company between a Japanese company and a Vietnamese company. MLIT has been providing assistances by way of top sales, etc.

On October 31, 2011, the Letter of Intent for Incorporation of Joint Venture Company was signed between a Japanese company and a Vietnamese company and the yen loan supply was decided in the presence of the Prime Minister of Japan and the Prime Minister of Vietnam with regard to the part concerning the public investment.

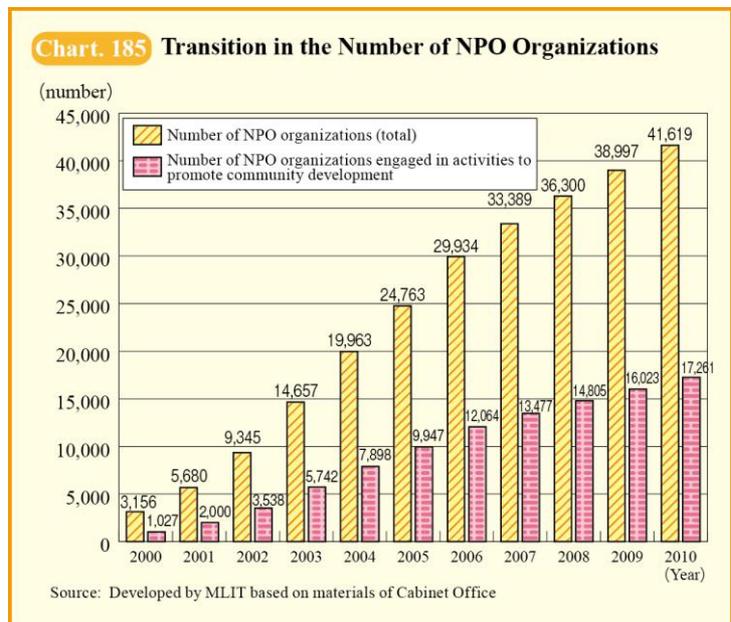
(4) Eco-City Development:

In December 2011, the Senior Vice-Minister of MLIT visited Vietnam with an autographed letter from the Prime Minister and the Minister of MLIT and paid a call on the Minister of Construction of Vietnam to exchange opinions about building cooperative relationship to promote eco-city development in Vietnam. Further in March 2012, the MLIT Parliamentary Secretary, Vice-Minister visited Vietnam and exchanged opinions with the Vice-Minister of Construction of Vietnam on how to go ahead with the eco-city development.



(Participation of “New Public Commons”)

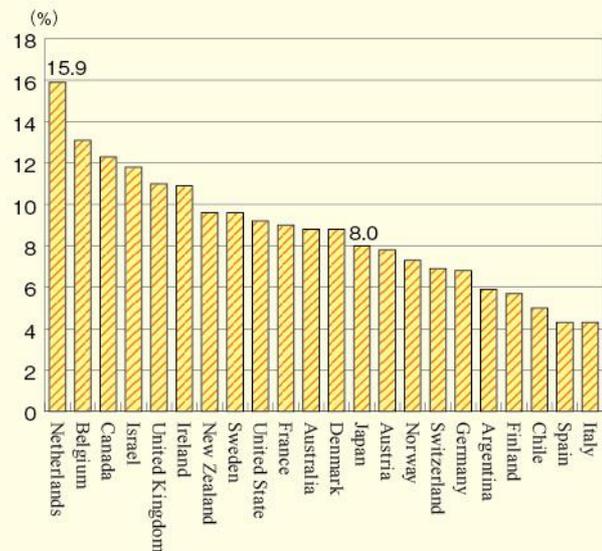
As a new approach to solve regional issues, the concept of so-called “New Public Commons” under which the public services conventionally borne by the government are to be realized through co-production of local communities and business operators is being widespread. The number of cases is increasing, in which actors such as local communities, business operators and NPOs voluntarily work to solve regional issues by themselves. The number of NPO organizations has increased tenfold in the last ten years, from about 3,000 to more than 40,000. In the reconstruction assistances after the Great East Japan Earthquake, a number of NPO organizations, etc., are participating actively.



However, in comparison with Western countries, the percentage of the population employed in the nonprofit sector to the total working age population still remains low.

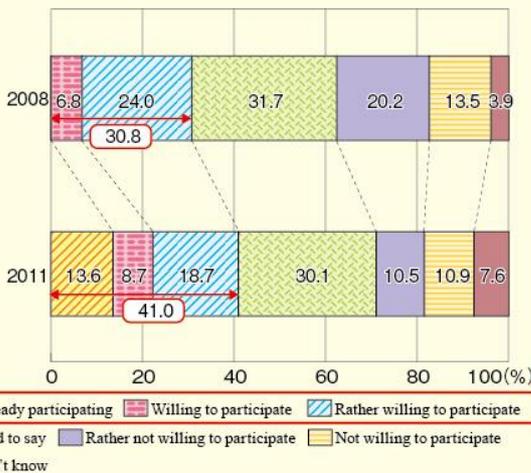
On the other hand, willingness of people to engage in NPO and public participation is increasing. The percentage of respondents who reported willingness to participate in community activities was about 30% in FY2008 national attitude survey, while it increased to about 40% in the latest National Attitude Survey. It is highly expected also from the administrative perspective that community development is carried out by various actors, especially by NPO and each individual citizen.

Chart. 186 Percentages of nonprofit sector employees to each total production-age population by country



Source: Developed by MLIT based on "Salamon, Sokolowski and Associates, Global Civil Society, 3rd ed." (Kumarian Press, 2010)

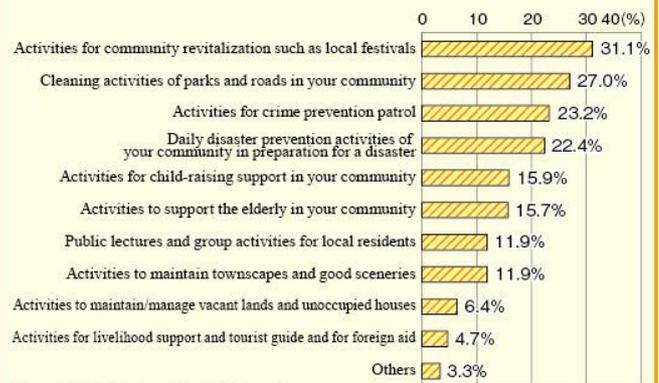
Chart. 187 Transition in Willingness to Participate in Community Activities of Residential Areas



Source: MLIT "National Attitude Survey"

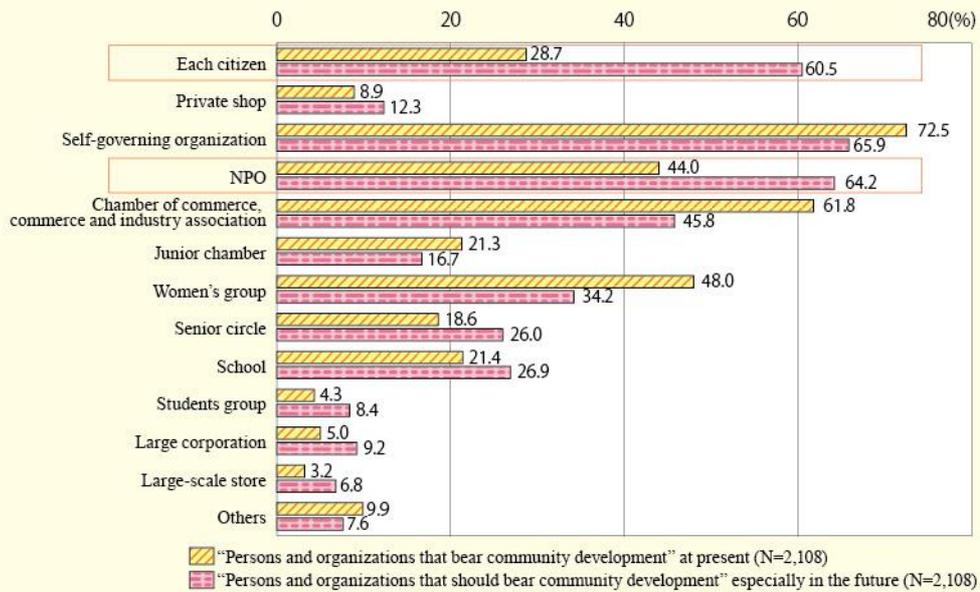
Chart. 188 Community Activities in Which People Feel Like Participating

Please inform of community activities in which you and your family do not mind participating (or are already participating). (as many as you like)



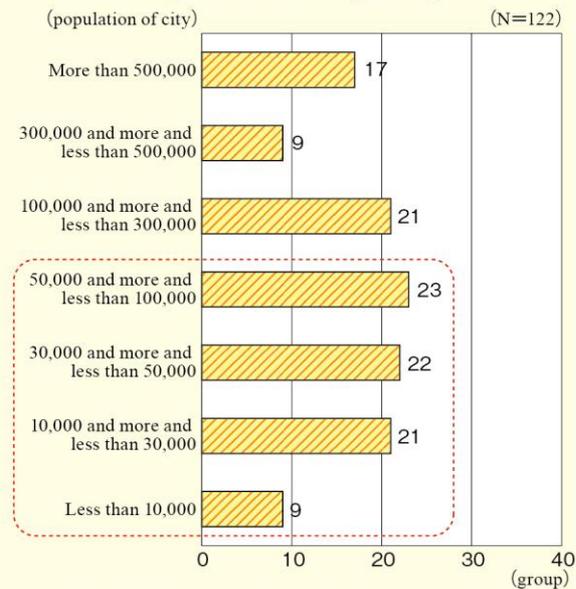
Source: MLIT "National Attitude Survey"

Chart. 189 Awareness Survey Result of Cities, Towns, and Villages Concerning Bearers of Community Development



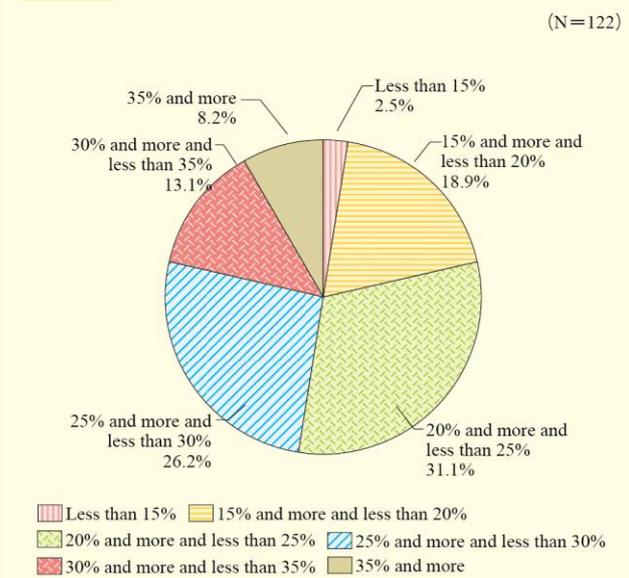
Source: Questionnaire survey on 3,204 municipalities nationwide conducted by MLIT in October 2003
 Number of valid responses: 2,108 municipalities (Valid response rate 65.8%)

Chart. 190 Population Size of Cities in Which Organizations Are Operating



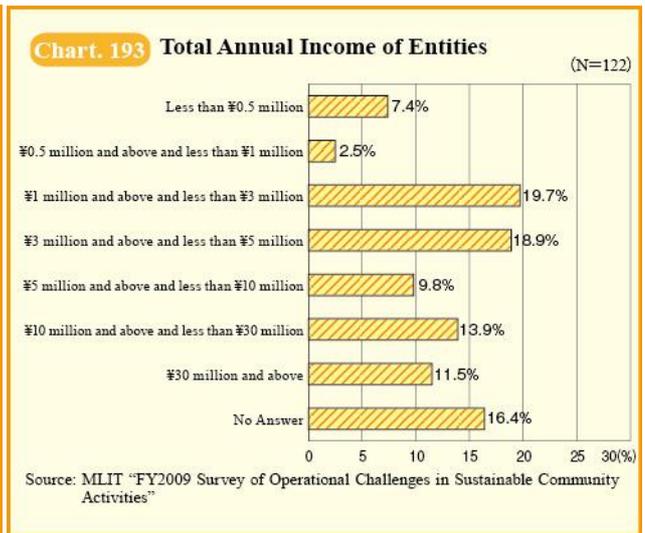
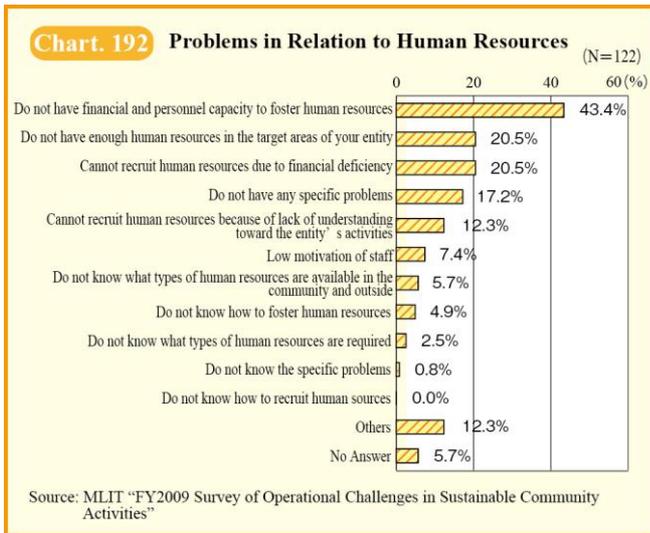
Source: MLIT "FY2009 Survey of Operational Challenges in Sustainable Community Activities"

Chart. 191 Population Aging Rates in Operating Areas



Source: MLIT "FY2009 Survey of Operational Challenges in Sustainable Community Activities"

Further with regard to the operational status of the entities, the average number of staff per entity is 12.1 persons and the number of entities whose total annual income is less than 5 million Japanese Yen accounts for a little less than 50%. This indicates a lack of financial capacity necessary to secure and foster human resources.



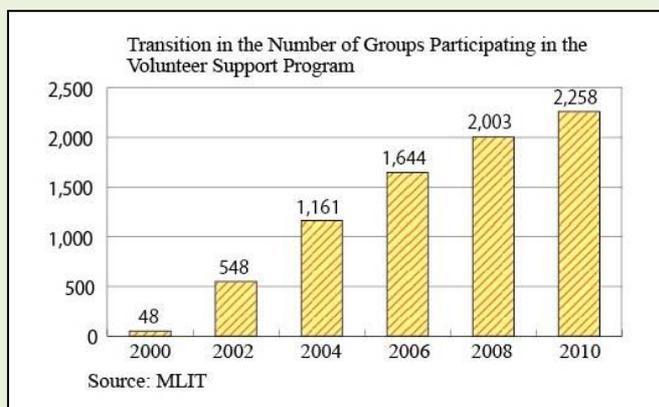
Under the above circumstances, the "New Growth Strategy" that was approved at the cabinet meeting in June 2010 defined the "New Public Commons" as "Not only the public sectors but also citizens/NPOs/private companies, etc., become the actors to proactively provide public goods and services by working with the spirit of mutual assistance in surrounding issues such as education, child-raising, town-building, nursing care and welfare, etc." and confirmed to support them.

In June 2011, as a result of the revision to the "Act to Promote Specified Non-Profit Activities (NPO Law)" aiming at environmental improvement for healthy development of NPO organizations, a new "authorized NPO system" was established, including (1) addition of activity fields (promotion of tourism, restoration of hilly/mountainous areas, etc.), (2) simplification of procedures, and (3) establishment of the new authorized NPO system including provision of temporary approval. Through use of these measures, it is important to encourage donation to the bearers of "New Public Commons" such as NPO organizations, etc. as well as participation in it, and to aim to fulfill the diversifying social needs through use of mutual support among people and their bonds to the local communities.

Column Citizen Participation in Road Maintenance

Since 2000, the MLIT has introduced the "Volunteer Support Program" into maintenance of national roads under the government direct control and has been promoting road maintenance work supported by community participation. A contract is made among an implementing entity such as a residents' group, a road administrator and cooperator (city/town/village), who work together to carry out daily maintenance of roads such as cleaning and weed killing. This can not only utilize citizens' power in facility maintenance but also promote regional exchange through activities.

The number of groups participating in the Volunteer Support Program is increasing every year and the number increased from 48 groups at the starting year of 2000 to 2,258 groups in 2010. It is our expectation that initiatives like this will further become widespread from now.



(Development of Community Fund)

When a business operator such as NPO engages in activities of public interest for a community, they tend to be able to raise only a limited amount of money as long as they rely on official supports and/or donations only. It is assumed that not a few citizens are willing to invest their money to improve their own community. It is required to have a scheme to let such “voluntary funds”, sleeping in communities, be invested to business operators who are to provide services of public nature.

As for a part of such a scheme, an entity to serve as financial intermediate called community funds are expected to go between the companies and individual citizens who work for the community and the citizens and corporations who want to provide money in some way. The purpose here is to raise funds from voluntary community citizens, the corporations, the local governments, etc., to invest them to the business projects of public interests that contribute to the community. By establishing such flow-of-funds scheme through these institutions, funds from a community will become available to use within that community.

CASE Community Fund

1. Development of the NPO Bank

The NPO bank is one of such organizations regarded serving as the community fund. According to data provided by Japan NPO-BANK Network, 12 NPO Banks in total existed as of March 2011. Their total investment amounted to 540 million yen. They provide loans to local NPOs and projects in the fields such as environmental programs and regional developments.

Name of organization	Year of foundation	Projects subject to finance	Amount invested	Cumulative loan amount	Loan balance
Mirai Bank	1994	Purchase of environmental goods, NPO, Ecohouse, etc.	162,885	967,294	62,573
Women/Citizens Community Bank	1998	NPO and W. Co (Note) operating in Kanagawa Pref.	127,440	477,765	82,656
Hokkaido NPO Bank	2002	NPO, W. Co	44,709	270,270	11,314
NPO Yume Bank (Nagano Prefecture)	2003	NPO	13,600	158,790	26,204
Tokyo Community Power Bank	2003	NPO, W. Co, Operator of projects for citizens, etc.	87,150	145,700	61,833
ap bank (AP Bank, a General Incorporated Association)	2003	Projects on environment for natural energies, etc.			
Community Youth Bank momo	2005	Projects to create communities where people can feel the productive future	45,490	52,460	19,407
Kumamoto Social Bank	2008	Projects with social nature operated in Kumamoto Pref.	3,480	0	0
Ten-nen Jutaku Bank	2008	Money for remodeling and emergency fund required when purchasing a house	39,315	8,504	1,623
Moyai-Bank Fukuoka	2009	NPO and entrepreneurs, etc. who operate projects with social nature in Fukuoka Pref. and neighboring regions	11,310	8,700	5,343
Shinrai Zaidan	2009		0	15,500	13,335
Peace Bank Ishikawa	2010	Projects by NPO, projects with social nature, and projects contributing to job creation and development of regions in Ishikawa Pref.	6,571	1,150	1,090
Total			541,950	2,167,012	201,676

Note: W. Co (Workers Collective) means a cooperative to commercialize “goods” and “services” required by a community as a citizens’ business through joint investment by workers who are not in employer-employee relationship but to work on equal terms as one business operator.
Source: Developed by MLIT based on data from Japan NPO-BANK Network

2. Citizens’ Windmills ~Natural Energy Fund ~

The Community Fund system is also used for financing natural energy projects.

The “Hamakaze-chan” constructed in Hamatonbestu-cho, Hokkaido, in 2001 became the first citizens’ windmill in Japan. Nearly 80% of its construction costs 200 million yen were afforded by the NPO Hokkaido Green Fund, in which system citizens donate 5% of their electricity charges for promoting widespread use of natural energies, in addition to the money invested by 217 citizens.

After this occasion, construction of citizens’ windmills has been rolling forward throughout the nation. Now the citizens’ windmills, which the fund raised in each region, are constructed in Hokkaido, Aomori, Akita, Ibaraki, Chiba and Ishikawa Prefectures.

“Hamakaze-chan” (Hamatonbetsu-Town, Hokkaido)



Source: NPO Hokkaido Green Fund

“Wa-n-zu” (Ajigasawa-Town, Aomori Pref.)



Source: NPO Green Energy Aomori

3. Redevelopment of shopping arcade in Marugame-cho, Takamatsu City ~Regional Development Fund~

In central Takamatsu City, traffic decrease and falling sales were getting evident, as of the hollowing out and decline of its shopping arcade gradually developed starting around 1985 due to factors including large-scale retail store openings in suburbs. Being concerned with such a situation, people of Marugame Shopping Arcade have had carried on the redevelopment project to rehabilitate the arcade for 20 years since its conception.

In 1998, a local-citizen oriented regional development company called “Takamatsu-Marugame Regional Development Co., Ltd.” (A quasi-public corporation) was established to become the pillar of redevelopment as the manager of the entire arcade. Although it is quasi-public, the company is unique in the point that, with the government side’s investment ratio being only 5%, its central-city redevelopment is driven by the private sector.

Adopting an approach to separate the use and possession of the land, it was decided that the company would operate the building by utilizing the Fixed Term Land Lease Right system, while the land right holder keeping the land ownership. Deeming the entire arcade as one shopping center, the company would operate it in an integrated manner. The company aims to develop an attractive shopping arcade that can satisfy customers by arranging necessary stores in their appropriate locations.

Dome Plaza in the Arcade



Source: Takamatsu City

4. Fund to support disaster- stricken areas by “Music Securities”

Established in 2001, the “Music Securities, Inc.” operates a microfinance platform called “Securite” covering various projects in various fields. It includes a “Music Fund” activity to foster music artists; to be more specifically, in this particular activity, it raises money from artists’ fans in an amount as small as 10,000 yen per unit, and provides the money to artists so that it can support their production of music works.

After the Great East Japan Earthquake, Music Securities has been developing “Securite Fund for Supporting the Disaster-Stricken Area.” The purpose is to raise money to be provided to shops, food processing companies, agricultural farms, etc., who want to restart their businesses in the stricken areas. Investors can choose any business they would like to support and make investment starting at 10,000 yen per unit.

In the stricken-area, not only homes but also all of factories, facilities, equipment, etc. have been carried away in a flood resulting from tsunami, and each business operator needs about several dozen million yen to restart their business. Music Securities raises funds extensively throughout Japan via the Internet, etc., so that it can help covering such business operators’ cost of recovery.

The money provided by investors consists of half financial backing (donation) and half investments. A person shall be an investor and a donator. Investors can not only receive a part of sales as dividends, but also, as bonus, receive the products produced by business operators, such as a set of food items, and participate in events like tours and experience of their factories. Through these involvements, it is aimed to follow and support the recovery in longer terms.

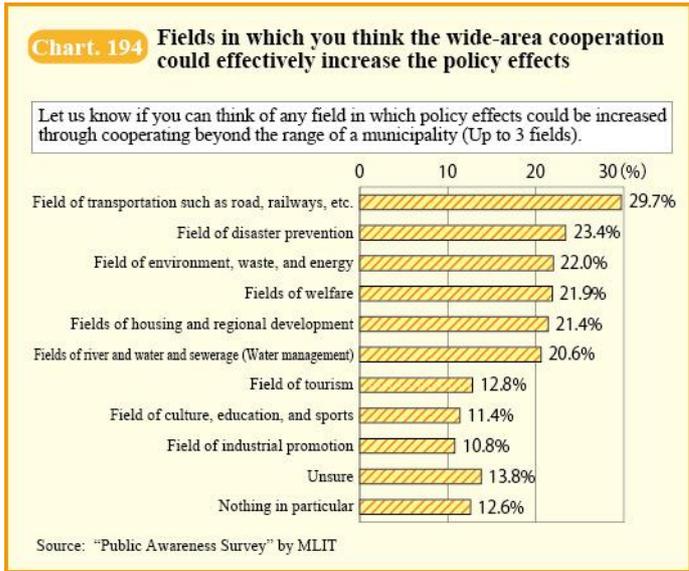
So far since the raising subscription started in April 2011, individual funds for each business operator who requires money were established in Hokkaido, Iwate, Miyagi and Fukushima Prefectures. And not a few funds have already finished raising required amounts. The total number of participant amounts to 21,000, and nearly 720 million yen has been raised in total (As of May 1, 2012).

(Wide-area Cooperation/ Inter-regional Cooperation)

As a measure to promote regional rehabilitation and vitalization with declining population in future, it is required to enhance cooperation between regions to generate social vitality through the expansion of interpersonal exchanges and transport of goods from a wide-area perspective. In this public awareness survey, the top answer to the question “Name the fields you think to which the wide-area cooperation measure could be most effective” was “transportation including roads and railways”(29.7%), followed by “disaster prevention” (23.4%) and “environment, waste, and energy” (22.0%).

As for the development of wide-area cooperation in the field of disaster prevention, this catastrophe has widely prompted the introduction of a system to improve local disaster prevention capability.

Located at a point that connects the coasts and inland areas of Sanriku region and with national roads radiating from it, Tono City, Iwate Prefecture, is within an hour's drive to coastline cities of Rikuzentakata, Ofunato and Kamaishi. Because of that, Tono City has been prepared to tsunami hazards by working out its logistical support concepts. Immediately after the outbreak of the earthquake, the Tono Athletic Park of the city was opened as the front-line base for the Self-Defense Forces, and teams of police, firefighting and medicine. In addition, the city delivered relief supplies from around the country, and sent volunteers, to stricken areas. Based on this experiences, it was approved at the Tono City Disaster Meeting held in March 2012 that the section “Logistical Relief Activities” would be newly added to the amended City’s Regional Disaster Prevention Plan so as to clearly position the relief efforts for tsunami-hit coastline areas of Iwate Prefecture as the city’s “role”. In addition, conclusion of the logistical relief agreement with other local governments and other relevant bodies and enactment of ordinance for logistical relief also are considered currently.

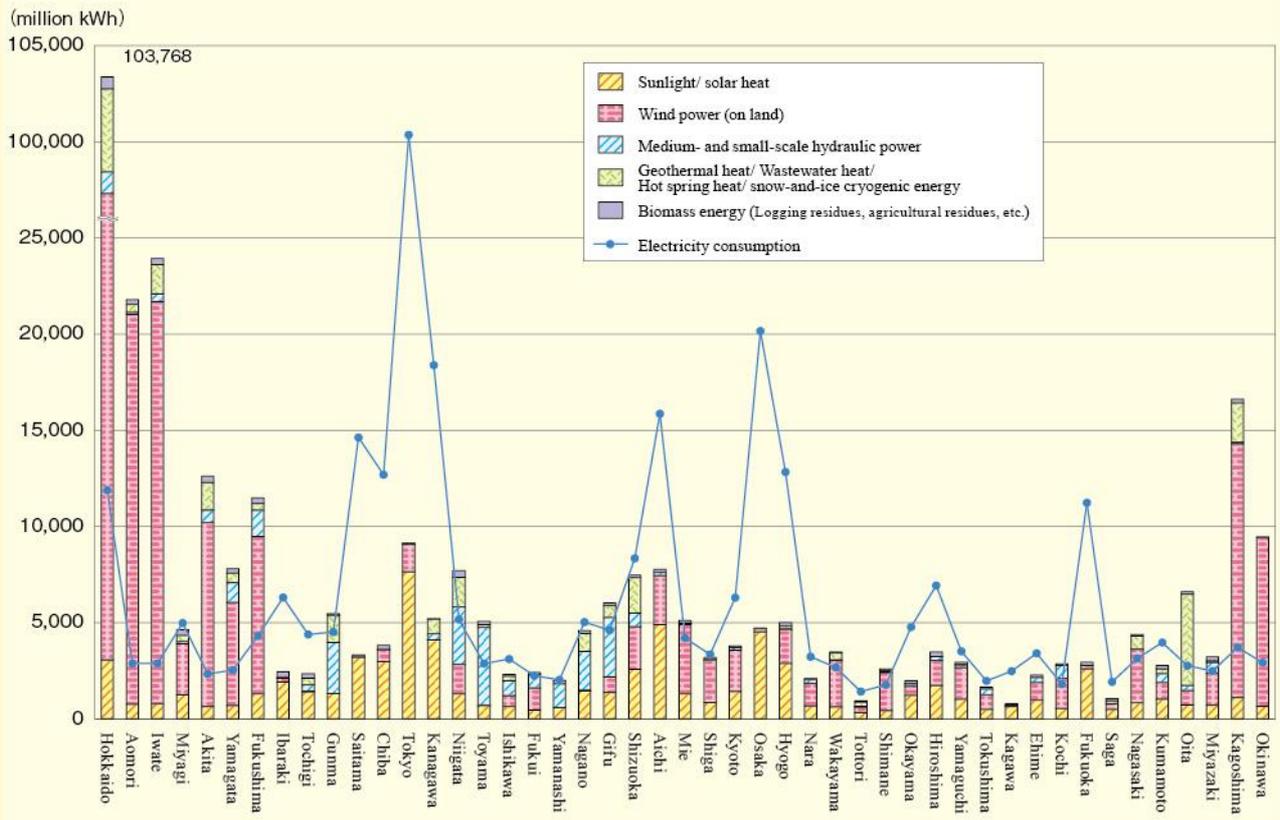


In light of the lessons learned from the Great East Japan Earthquake, municipalities started to consider establishing their ordinances for mutual relief at the time of disaster, aiming to develop the system “horizontal relief” among municipalities (city, special ward, town, village) in time of disaster. Within the year of 2012, the 5 municipalities (city, special ward, town), namely Sugunami Ward, Tokyo/South-soma City, Fukushima Pref./Nayoro City, Hokkaido/Ojiya City, Niigata Pref/Higashi-azuma Town, Gunma Pref. aim to enact an ordinance, which would contain provisions such as that, in disaster time, the 5 municipalities shall mutually supply relief goods between them, and also receive victims, and others.

Also in the energy field, it is noticed that there are movements towards the wide-area cooperation. In order to achieve inter-regional cooperation on the issue of renewable energies, Tokyo metropolitan government concluded agreements with Hokkaido, Aomori, Iwate, Akita and Yamagata Prefectures in March 2010. Tokyo will encourage energy consumers in Tokyo to create demand for renewal energies, while Hokkaido and the 4 Tohoku prefectures will develop in each region and supply renewable energies.

With regard to the potential of renewable energy by prefecture, the potential is high in Hokkaido and Tohoku regions, whereas the electricity consumption is extremely high in prefectures consisting metropolitan areas. So, we can expect to create more local jobs and vitalities by effectively using the energy generated in regions with abundant nature for large consumption centers through the system of cooperation between cities and local regions.

Chart. 195 Electricity consumption and usable supply of renewable energies by prefectures



Note: Converted at 1GJ=277.8kWh
 Source: Developed by MLIT based on "Environmental Statistics 2011" (Ministry of Environment) and The Green Government Reform, 4th Subcommittee "Uniform guideline on surveys on abundance, etc. of renewable energies, etc." (Ministry of Internal Affairs and Communications)(Scenario 1 was adopted. The item "on the sea," however, was not included in the survey items.

Section 2 Promoting sustainable, vigorous development of the national land and regions

In addition to population decrease, declining birthrate, aging population, fiscal constraints, and intensified international competitions, Japan is facing energy constraints precipitated by both the earthquake disaster and global environment issues. In order to build the bright future of our nation by overcoming these issues, it is essential to promote the development of sustainable and vibrant national land and regions. As the basic policy for that, “The 4 values to achieve and 8 new directions of policy development” were prepared in November 2011. Making the most of its on-site capabilities, integration power and instantaneous response capabilities MLIT has, we have been developing the measures that are extensive vertically (from on-site operations to System), laterally (field diversity) and outwardly (coordination with other ministries and agencies).

Chart. 196 The 4 values to achieve and 8 new directions of policy development

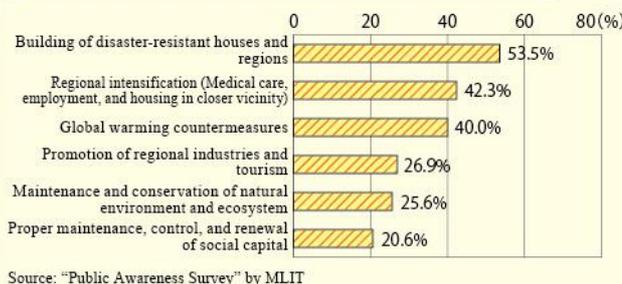
Values to achieve	New directions of policy development	Specific example
I Realization of sustainable society	1 Construction of low-carbon and recycling-oriented society 2 Enhancement and intensification of regional life and economic functions	Energy creation, storage and saving; storage battery Bringing “medical care, employment and housing” closer each other in terms of both distance and time
II Ensuring of security and safety	3 Disaster-resistant housing and regional development 4 Proper maintenance, control, and renewal of infrastructure	Earthquake resistance improvement, development of crisis management system Fact finding, life extension, total cost reduction
III Economic vitalization	5 Expansion of demand by utilizing personal assets, etc. 6 Taking private sector funds and knowledge into public sector	Revitalization of real estate, tourism, and airline markets Promotion of PPP/ PFI
IV Enhancement of international competitiveness and presence	7 Overseas development of Japan’s fields of expertise, and international contributions 8 Promotion of infrastructure development for international competition	Cross-cutting export of hardware and software infrastructure Metropolitan loop road, strategic international port, metropolitan hub airport, ocean frontier

In this public awareness survey, the top answer to the question on things regarded important in building sustainable national land and regions was “building of disaster-resistant houses and regions” (53.5%), followed by “regional intensification” (42.3%) and “global warming countermeasures” (40.0%).

Reaffirming the most important mission of infrastructure development “to protect people’s safety and security”, the Ministry of Land, Infrastructure, Transport and Tourism is also making efforts to “build the sustainable and vibrant national land and regions” that addresses also the energy constraint issue, etc. precipitated by the earthquake disaster.

Chart. 197 Things you think important in building sustainable national land and regions

Please let us know what you think important in building sustainable national land and regions. (any number of items)



(The Bill for the Promotion of Low-Carbon Cities)

Based on the changing energy supply and demand and higher public awareness on energy and global warming that have been precipitated by the earthquake disaster, it has become important to revitalize the housing market and regional economy through the promotion of private investment in urbanization promotion area, etc. For this we will promote the spread of low-carbon cities and transportations and rational energy use by accumulating success examples thereof. Against this backdrop, the MLIT submitted “The Bill for the Promotion of Low-Carbon Cities” to the 180th Session of the National Diet in February 2012. Major contents of the Bill are as follows:

1) Intensification of urban functions, promotion of public transportations, etc.

In Japan today, in spite of the trend of population decrease, we see also the situation such that cities are sparsely scattering. Especially in regional cities, the rate of dependence on private vehicles is increasing, while the use and the level of service of public transportations including bus have been declining further. Such state like this causes inconvenience to people who cannot use private vehicles. Considering the further progress of aging of the population in future, measures such as intensification of urban functions and promotion of the use of public transportation are urgently required.

In this Bill, the MLIT will promote the building of towns and cities aiming to convert them into urban structure that would not excessively depend on private vehicles. Specifically the MLIT plan to create a system where the intensified urban development business (business of intensified urban functions by private sector) will be authorized by the head of each municipality, and another system where business of establishing new bus routes, constructing railway stations, etc., which contributing to promote the use of public transportations, will be authorized.

2) Promotion of management of green space and use of unused energy, etc.

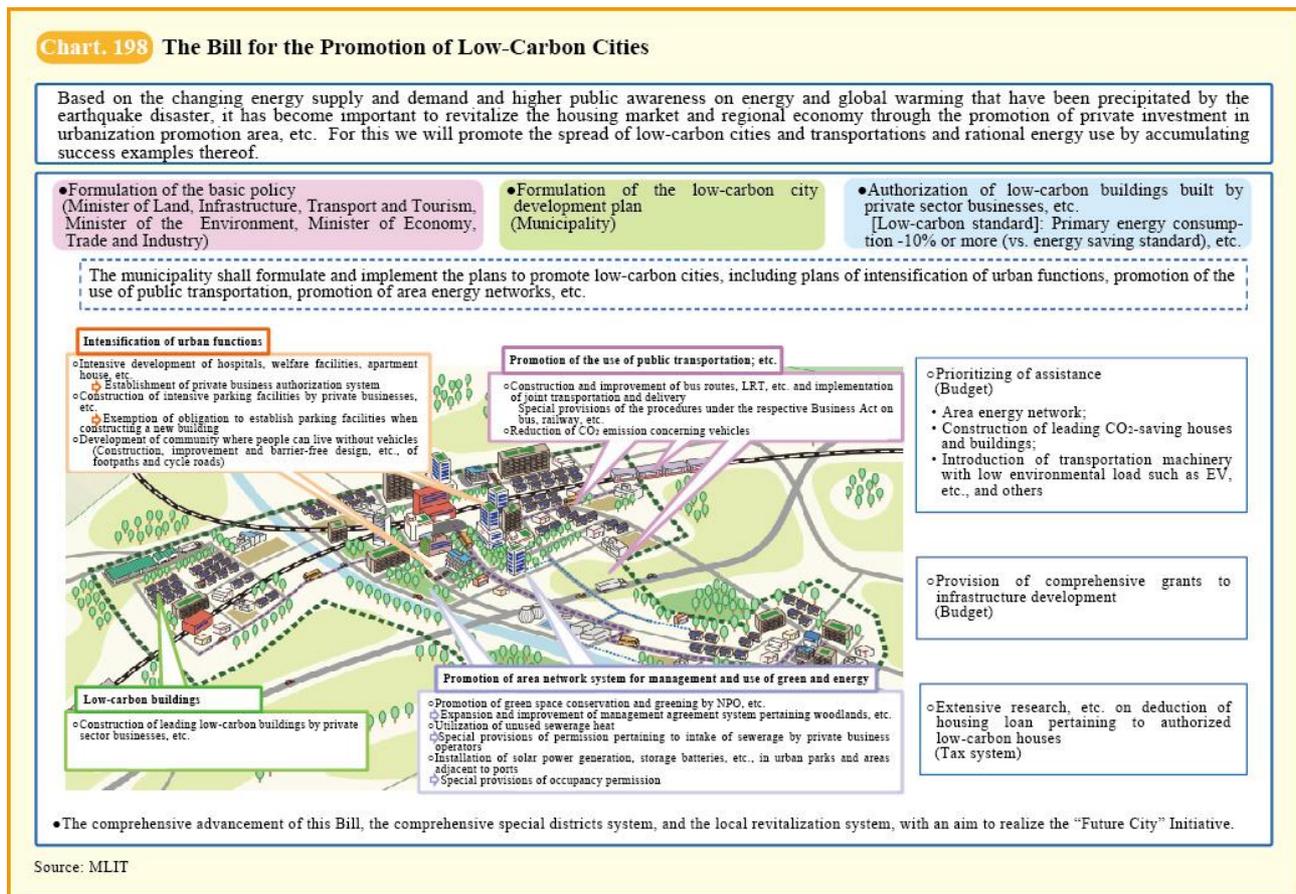
In order to promote low-carbon cities, we need to improve the energy-saving performance in buildings and automobiles. We also need to promote the conservation of green spaces, and the greening, as the sink for greenhouse gases, the effective use of unused energy such as sewerage heat, the utilization of renewable energies by installing solar panels, storage batteries, etc., utilizing the space in urban parks, ports, etc.

Therefore, in this Bill, in addition to the special provisions of management agreement pertaining to woodlands, etc., the special provisions of permission pertaining to intake of sewerage by private business operators, and the special provisions of permission pertaining to the occupation in urban parks and ports, etc., are established.

3) Low-carbon buildings

The energy saving performance of a building gives a significant long-term impact to CO₂ emission in civilian sectors (household sector and business sector). Therefore, in this Bill, system for authorizing the low-carbon buildings with excellent energy-saving performance, etc., shall be established so that the construction of low-carbon buildings can be promoted.

Acquisition of authorized buildings shall be supported through the incentives such as exceptional tax rate, exceptional floor area ratio, etc.



(Environmental improvement for the existing house and home improvement markets)

As for the housing market, it is necessary to convert from housing market centering on new houses into the market of stock-type houses, which, by improving the housing stocks' quality and performance, can be recycled through distribution network of existing houses.

As existing houses are regarded that their quality, etc., varies more significantly than in the case of new houses, it is vital to secure that quality and price information of a property as well as the information that enables consumers to compare with other properties will be provided to consumers. Many consumers tend to have anxiety about existing houses, mostly because they don't know about the quality of such houses. It is important to improve the environment where consumers can use objective information on the quality of houses.

As for home renovation, it is required to give consumers information such as the construction costs, the business operator's past records and reputation so that consumers with less technical knowledge and experiences can consider the details of renovation improvement or properly choose home renovation business operator. It is also important to give information how to proceed with renovation, and the effect and merits of renovation so that consumers can properly carry out renovation that would suits their own needs, in addition to prevention of troubles pertaining to renovation and support consumers when a trouble occurs.

Also, in order to widen the range of selection of houses by improving the quality of stocks of existing houses, we need to support renovation that contributes in quality improvement of the existing housing stock, and promote renovation that can improve the existing houses into higher quality and promote distribution in markets, by improving the system of long-term excellent houses, etc. Amidst population decline and aging population, it is also important to proceed with efforts for proper maintenance and management and the effective use of the apartment houses, privately rented houses, and elderly peoples' own houses, of which maintenance and management are highly probable to become an issue. Here also important is to promote relocation according to life cycles.

Moreover, in order to develop and maintain the system for providing existing houses and house renovation that can respond consumers' diverse needs, the MLIT will support improvement of the consulting capacity of building lots and buildings transaction businesses and the technical strength of mid and small-sized building contractors, and also promote efforts such as entry as well as coordination by business operators from diverse industry fields, while also trying to structuring equal relationship among business operators. In addition, the MLIT will also promote development of inspection skills for properly understanding the quality, etc., of existing houses, and development of construction materials and methods for cutting cost in renovation works.

Houses form the basis of our livelihood, and also an important element of cities and streets. To maintain and improve their asset value can, together with the improvement of performance and quality as building, be achieved in conjunction with favorable living environment including services supporting the state of living in residence and the beautiful streets. Therefore, it is important to develop and maintain favorable residential environments and beautiful streets while securing the safety and disaster-resistance in urban areas.

From these standpoints, we establish 5 important measures to be the pillar for developing existing housing distribution/ renovation markets ; 1) Development of the environment for the existing-housing distribution market, 2) Development of the environment for home renovation market, 3) Promotion of the improved quality of existing housing stock, 4) Enhancement of workers in existing-housing distribution and renovation markets, 5) Development of the living environment & the beautiful streets. The MLIT will promote efforts developed along these 5 measures in an integrated manner, and aim to achieve our goal to double the size of existing-housing distribution and renovation markets (20 trillion yen) by 2020 as indicated in our new growth strategy.

(Uniform promotion of the management of CO₂-saving and energy-saving in vehicles, households and businesses)

In order to have uniform promotion of the management of CO₂-saving and energy-saving in vehicles, households and businesses, the MLIT support the development, etc., of energy-saving system that uniformly manages the energy consumption of vehicles and that of household and businesses. Based on this, we will achieve the dissemination of EV, etc. (electric vehicles, plug-in hybrid vehicles and micro mobility) and the uniform promotion of reasonable CO₂-saving/ energy-saving measures among vehicles.

(Promotion of coordination between restoration of schools and community development)

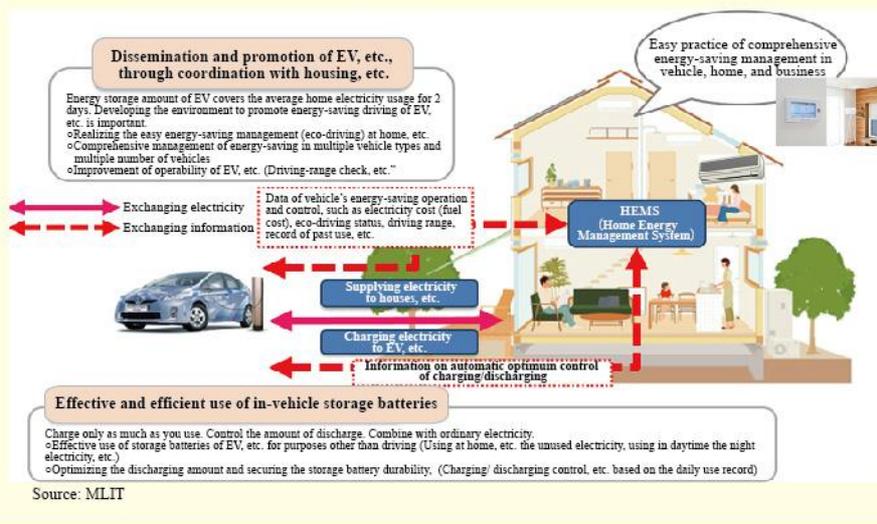
From the perspective of deepening the relationship between schools and community development, the environmental consideration, and the disaster-prevention, the MLIT will enhance and promote coordination between restoration of schools that were hit by the great east Japan earthquake and the community development. More specifically, the MLIT will collaborate with the Ministry of Education, Culture, Sports, Science and Technology and the Ministry of Agriculture, Forestry and Fisheries to promote measures such as the securing of safe and secure location for community and school, the combining school facilities and public institutions, the development of eco school which promotes the zero energy and lignification, etc., and the development of community disaster prevention and evacuation bases.

Chart. 199 Outline of the Total Plan of the Existing Houses and Renovation

1. Improvement of environment for markets to stimulate the distribution of existing houses	(1) Improvement of provision of information on existing houses (2) Integrated provision of services related to the distribution of existing houses (One-stop service provision by building lots and buildings transaction businesses, Promotion of renovation by taking the opportunity of distribution of existing houses) (3) Securing the quality of existing houses (Dissemination and promotion of inspection, Improvement, dissemination and promotion of evaluation/indication of house performance, accumulation and utilization of house history information) (4) Dissemination of the fixed term house lease system (5) Troubleshooting in existing house trading (Improvement, dissemination and promotion of the insurance of products liability in house trading, and development of dispute-settlement system) (6) Promotion of price formation according to the quality of housing
2. Environmental improvement for housing renovation	(1) Providing information on renovation (Cost of renovation work, renovation business operators, how to proceed renovation, proper methods of maintenance/management, and dissemination of effects and merits of renovation) (2) Troubleshooting in renovation works (Improvement, dissemination and promotion of insurance of products liability housing renovation, promotion of the use of consumer support system, development of dispute-settlement system, and measures against malicious renovation business)
3. Promotion of the quality improvement of existing housing stocks	(1) Supporting the renovation of existing housing stocks (The support for renovation aiming to improve the earthquake-resistant and energy-saving performances of existing houses, the support for renovation triggered by the distribution of existing houses, and the enhancement of renovation loans) (2) Dissemination/acceleration of the system of long-term excellent houses (3) Promotion of proper maintenance, management, and renewal of apartment houses, etc. (4) Promotion of effective utilization of private rental housing stocks through renovation (5) Promotion of relocation according to life cycles
4. Workers in the fields of distribution and renovation of existing housing stocks	(1) Enhancing the improvement of consulting capacity of building lots and buildings transaction businesses (2) Improvement of the technical strength and sales capability of the mid and small-sized building contractors (3) Promotion of the entry as well as coordination by diverse players so that the attractiveness of renovation can be enhanced. (4) Technological development concerning existing housing stocks and their renovation, etc. (development of the inspection technology (non-destructive inspection), the renovation technology for improving housing performance, the technology of renewal of apartment house, the technology for life extension, and the infill-renovation technology)
5. Development of the living environment and the beautiful streets	(1) Ensuring the security in urban area (2) Development of the favorable living environment and the beautiful streets

Source: MLIT

Chart. 200 Uniform promotion of the CO₂-saving and energy-saving in vehicles, households and businesses



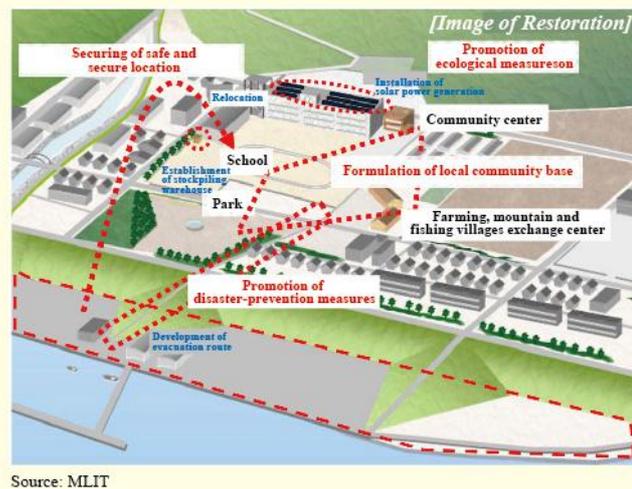
(Promotion of supply of housing with service for elderly)

In Japan, as the population ages rapidly, households of elderly single person or couple-only are increasing. It is extremely important to secure the housing with the service supporting elderly people, through the coordination with nursing care and medical care services. In October 2011, as the system jointly managed with the Ministry of Health, Labour and Welfare, the MLIT newly established “System of housing with service for elderly people”, which is a system that requires the operators to register at the head of prefecture, ordinance-designated city, or core city. For promoting the supply of such housing, the private business operators of the system are supported and receive assistance, tax benefits and finance.

Consideration for the use of this system also has been concrete among public-sector business operators. With their housing complex rehabilitation, the Tokyo Metropolitan Housing Supply Corporation, for example,

announced its policy to supply rental housing for elderly people, in addition to invite facilities related to nursing care, nursery center, etc. in order to respond to the situation of increased number of elder people and children on the waiting list for nursery centers.

Chart. 201 School restoration and community development (Image of restoration)



Case example

Mukaihara Jutaku (Itabashi-ku, Tokyo)

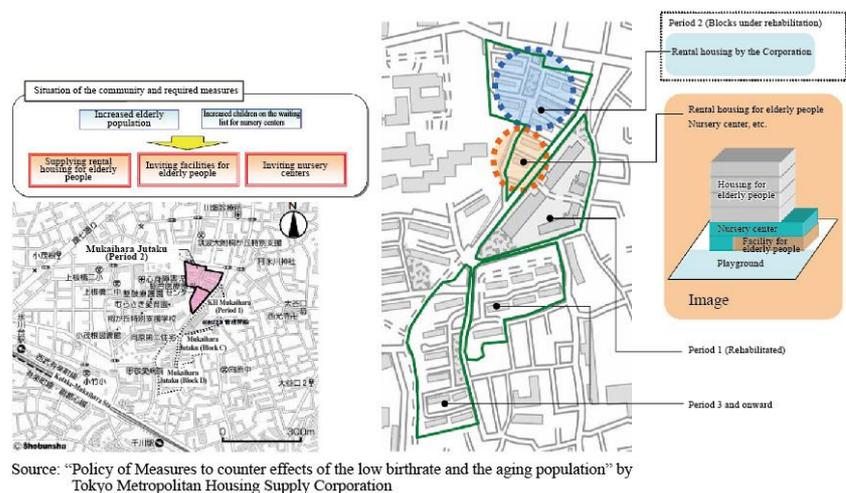
Planned to construct approximately 50houses with services for elderly people on the site created by rehabilitation of old housing estate

Scheduled site: Mukaihara, Itabashi-ku, Tokyo

Scheduled period: Fiscal 2012 - 13

Site area: 5.3ha

Number of houses managed: 840



Reference Materials

Chart. 202 Major Related-Budgets for FY2012 (National Expenses)

Values to achieve	New directions of policy development	Major businesses/ budget amounts
I Realization of sustainable society	<p>1. Construction of low-carbon/ recycling-oriented system</p> <ul style="list-style-type: none"> ○Fully check the entire measures under MLIT's jurisdiction, and reconstruct them, from the perspective of energy, resource, and coexistence with nature ○Taking the lead in efforts to be done in national facilities, etc., while caring about understanding by citizens and businesses and having awareness raising in mind. 	<ul style="list-style-type: none"> *Zero-Energy Housing promotion project: 2.3 billion yen (full increase) *Development of Zero-Energy Government Buildings (a model project implemented together with the restoration of disaster-stricken government buildings): 0.2 billion yen (full increase) *Acceleration of low-carbon city development including the promotion of Area Energy Networks: 0.9 billion yen (1.90) *Dissemination and promotion of eco-friendly vehicles, etc. (Uniform promotion of the management of CO₂-saving and energy-saving in vehicles, households and businesses): 1 billion yen (0.99) *Environmental measures and promotion of energy saving in maritime traffic (Overall measures concerning the vessels using alternative energies; etc.: 1 billion yen (1.12) *Promotion of low-carbon and recycling-based infrastructure development and regional development: 22.6 billion yen (1.10)
	<p>2. Enhancement and intensification of regional life and economic functions</p> <ul style="list-style-type: none"> ○For maintain and improve regional living standards, intensify the living and economic functions, and secure the mobile access. ○Create the living environment where the elderly people can live safely on their own, and the young generation can enjoy working and caring child. 	<ul style="list-style-type: none"> *Project of promoting the stabilization of residence for elderly people, etc.: 35.5 billion yen (1.09) *Project of promoting the housing safety network development by utilizing private housing: 10 billion yen (full increase) *Project for assisting the acceleration of intensive city development (as a part of the overall grants for infrastructure development) *Securement, maintenance, and improvement of regional public transport: 33.2 billion yen (1.09) *Steady development of Projected Shinkansen line: 70.6 billion yen (1.00) *Regional revitalization by railway: 27.5 billion yen (1.15)
II Ensuring of security and safety	<p>3. Disaster-resistant housing and regional development</p> <ul style="list-style-type: none"> ○With respect to less-frequent large-scale disaster, promote "Disaster risk reduction" measures in an integrated manner with regions. 	<ul style="list-style-type: none"> *Promotion of measures for earthquake and tsunami-resistant public facilities: 215.7 billion yen (1.16) *Securing safety in houses and buildings: 4 billion yen (4.00) *Promotion of measures to ensure safety in areas with intensive urban function: 0.3 billion yen (full increase) *Disaster-prevention measures in areas stricken by floods and landslides of extreme severity: 115.2 billion yen (1.03) *Development for solving nationwide missing links: 366.3 billion yen (1.09) *Enhancing the provision of disaster-prevention information on typhoon, torrential rainstorm, earthquake, volcanic eruption, etc.: 14.6 billion yen (1.00)
	<p>4. Proper maintenance, control, and renewal of infrastructure</p> <ul style="list-style-type: none"> ○Carry out proper maintenance/ control/ renewal of infrastructure by national and local governments in a planned manner 	<ul style="list-style-type: none"> *An amount as a part of the cost of maintenance and management of roads, rivers, etc.: 345.9 billion yen (1.02) *Formulation of the long-life port facility development plan: 0.4 billion yen (0.99)
III Economic vitalization	<p>5. Expansion of demand by utilizing personal assets, etc.</p> <ul style="list-style-type: none"> ○Try to expand demand mainly in real estate, tourism, and airline markets by focusing on the assets held by individuals, mainly the older generation, and the rapid economic growth in emerging nations centering on Asia 	<ul style="list-style-type: none"> *Promotion of a tourism state: 10.1 billion yen (1.02) *Development and vitalization of the market for the distribution of existing housing stocks: 0.1 billion yen (full increase)
	<p>6. Taking private sector funds and knowledge into public sector</p> <ul style="list-style-type: none"> ○Promotion of PPP/ PFI in which the operation and management of a public facility together with its neighboring-area development are involved in an integrated manner ○Development of foundation for enhancing international competitiveness through public-private partnerships 	<ul style="list-style-type: none"> *Promotion of growth strategies and restoration after earthquake disaster through public-private partnerships: 0.8 billion yen (1.27) *Promotion of voluntary and strategic regional development by new actors: 0.9 billion yen (1.54)
IV Enhancement of international competitiveness and presence	<p>7. Overseas development of Japan's fields of expertise, and international contributions</p> <ul style="list-style-type: none"> ○Overseas operation of infrastructure through public and private partnership, utilizing MLIT's "overall capabilities". (Operation in the form of cross-cutting package, Creation of the system "from upstream to downstream", Overseas operation of soft infrastructure including disaster-prevention package) 	<ul style="list-style-type: none"> *Promotion of the overseas projects through public-private coordination as well as the overseas operations by construction industry: 1.6 billion yen (1.27)
	<p>8. Promotion of infrastructure development for international competition</p> <ul style="list-style-type: none"> ○New traffic network construction by taking the progress of infrastructure development into consideration ○Efficient and intensive development based on competition and coordination ○Exploration of ocean frontier 	<ul style="list-style-type: none"> *Development of metropolitan loop roads: 123.7 billion yen (1.11) *Development of strategic international container and/ bulk ports, etc.: 117.1 billion yen (1.05) *Enhancement of metropolitan airports: 11.8 billion yen (1.89) *Development of bases for activities in remote islands: 10.8 billion yen (3.92) *Promotion of ocean survey for preserving ocean rights and interests; etc.: 2.9 billion yen (2.74) *Project for developing core urban areas for international competition: 6.9 billion yen (1.58)

Note: 1 Besides this, in the case that a local government carries out infrastructure development in conformity with the direction of policy development described above, the overall grants for infrastructure development (1,439.5 billion yen) is available to use.
 2 Of the above-described projects, those related to disaster recovery and reconstruction shall be, with some exceptions, posted by the Reconstruction Agency.

Source: MLIT

Part I Postscript

Amidst the changing economic and social conditions surrounding Japan, which include further population decrease and aging population, intensification of international competition, etc., the disaster of great earthquake occurred. Through the reconstruction, it is required for us to build the national land where people would be able to live in security, and to develop new policy lines for sustainable as well as vibrant national land and regions.

In light of these conditions, we compiled this White Paper under the theme of “The shifts in the government's national land and transportation administration through reconstruction --Sustainable vigorous development of the national land and regions--”.

In our future national land and regional development, the following issues are considered to become more important:

- 1) Promotion of the social capital asset and management operation such as the further selection and intensification of public works, the rationalization, consolidation of facilities, disposal, utilization, and exploitation, etc., that suit the regional needs.
- 2) Further utilization of private funds and know-how in the public sector by promoting PPP/PFI, etc.
- 3) Development of new industries that suit the new social capital needs, as seen in the case of the renewable energy introduction, and the development and growth of the private markets pertaining to the national land and transportation-related industries including the existing housing renovation as well as the tourism.
- 4) Support and fostering of new public activities and the systems of self-help and mutual assistance by local residents, NPOs, etc.

In preparing the Part 1 of the White Paper, mainly for the Chapter 2 “Sustainable and vibrant national land and regional development”, we could have useful and valuable inputs and opinions from Prof. NEMOTO Yuji (Toyo University, Faculty of Economics), Mr. OGAWA Hiroaki (Head of the Regional Planning Department and the Public Sector Relationship and Management Group, Development Bank of Japan Inc.), Ms. SAKITA Yuko (Environmental journalist and Director of NPO GENKI Net for Creating a Sustainable Society), and Prof. TANAKA Mitsuru (Hosei University Graduate School of Political Science). (Names in alphabetical order; the titles are as of the time of writing). We were given valuable information and instructions also from municipalities concerned. We would like to take this opportunity to express our deep appreciation to everyone.