


Green Infrastructure
Creating Social Infrastructure with Nature

Recommendations for Green Infrastructure Projects and Finances

~Toward the Promotion of Investment in Urban Development and City Planning through Visualization of Economic Benefits— (Summary)




September 2024

Research Group on the Economic Value of Green Infrastructure in the Marketplace

Ministry of Land, Infrastructure, Transport and Tourism (Secretariat)

Recommendations for Green Infrastructure Projects and Finances

~Toward the Promotion of Investment in Urban Development and City Planning through Visualization of Economic Benefits~

Overview

- Green infrastructure initiatives are being implemented globally as concerns over biodiversity loss and other pressing environmental challenges intensify.
- Although numerous instances of green infrastructure integration in urban development and planning have been documented, advancing the adoption of green infrastructure requires cultivating a shared understanding of its benefits among diverse market stakeholders.
- In light of this, our study group convened five times and produced the report titled "Recommendations for Green Infrastructure Projects and Finances" , summarizing the outcomes of these discussions.
- This document extensively details (1) the array of economic benefits derived from green infrastructure, including the revitalization of local economies, reduction of flood risks, enhancement of productivity and quality of life, and cost savings, illustrated through numerous case studies. Along with (2) the positive impacts of green infrastructure initiatives on corporate asset values and real estate valuations, such as price adjustments, rental dynamics, yield improvements, and their broader economic ripple effects—are thoroughly summarized, analyzed, and presented clearly. It is expected that this document will help not only the companies and investors who are pioneering the initiatives but also the community development operators and financial institutions understand and consider implementation of the initiatives.

(1) Target and intended use of this document

Community development projects, etc.:
Green infrastructure is costly. What are the economic benefits?

Financial institutions:
Want to use the information to confirm the economic benefits of a project.

Investors:
Want to use it as a material to decide whether or not to invest.

Municipalities:
Want to know the effects of the company's initiatives on the local communities.

(2) Global and domestic trends

- ✓ "Nature Positive" approaches, on par with decarbonization efforts, have gained global traction following the adoption of the "Kunming-Montreal Global Biodiversity Framework " (December 2022) and the Recommendations of the Taskforce on Nature-related Financial Disclosures (September 2023).
- ✓ In Japan, the movement began with the Cabinet's approval of the "National Biodiversity Strategy and Action Plan of Japan 2023-2030 " (March 2023), followed by the "Transition Strategies toward Nature Positive Economy " (March 2024), alongside various other laws, strategies, and plans.
- ✓ As an integral part of the Nature Positive initiative, the Ministry of Land, Infrastructure, Transport, and Tourism introduced the "Green Infrastructure Promotion Strategy 2023 " in September 2023.

(3) Examples of diverse economic effects of green infrastructure

Revitalization of the local economy (increase in visitors, etc.)

Commercial facilities × Utilization of existing trees in abandoned forests

The number of visitors to the city doubled.
(E.g.: Nigiwai no Mori / Inabe City, Mie Pref.)

Reduction of flood risk

Commercial facilities × Rain garden development

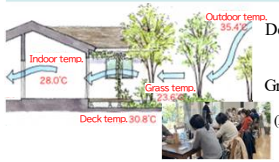
Rain gardens contribute to controlling rainwater runoff
(confirmed infiltration rate of approx. 2.5 m³/hr in a 30m² rain garden).
(E.g.:Minami-machida Grandberry Park/Machida, Tokyo)

Improvement of productivity & quality of life

Office × Green space development

Stress level decreased by approx. 12%, and concentration improved by approx. 35%.
(E.g.:Tokyo Portcity Takeshiba/Minato Ward, Tokyo)

Cost reduction



Design integration of residential house × Building and garden

Green shade has improved the quality of life and enabled energy saving in A.C. use.
(E.g.: Kanon no Mori /Kumagaya, Saitama Pref.)

(4) Impact of green infrastructure on economic value

(a) Existing studies on Green Premium

✓ **Relationship between environmental real estate and real estate value**

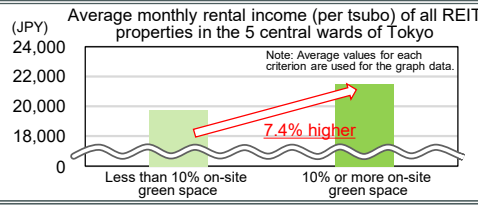
- "Green buildings have the potential to earn higher rents (3%)" (Eichholtz et al., 2010; U.S.).
- "4.6% rent increase effect before and after acquiring environmental certification (CASBEE, etc.)" (Sumitomo Mitsui Trust Bank , 2022).

✓ **Relationship between real estate value and surrounding green space**

- "The transaction premium increases by 8.9% to 10.5% and the rent premium by 5.6% to 7.8% depending on the degree of street greenery" (Juncheng Yang et al., 2020; New York).
- "For condominiums, there is a 2 to 2.5% increase in average house prices when the amount of green space within 100 meters increases by 10%" (Kuroda et al.,2023).

(b) New economic value analysis (on-site green infrastructure and real estate value)

- ✓ Multiple regression analysis of the relationship between on-site green space and real estate value for REIT properties in the 23 wards of Tokyo.
- ✓ In Tokyo's 5 central wards (Chiyoda, Minato, Chuo, Shinjuku, and Shibuya), properties with 10% or more green space on-site earned about 7.4% more in monthly rent (per tsubo, approx. 3.3m2) compared to those without green space.



(c) Ripple effects on economic value from promoting green infrastructure

✓ Analyze the ripple effects of green infrastructure in terms of whose and what kind of economic value it will generate.

Green infrastructure initiatives by private sectors in urban development projects

Environmental benefits
- Biodiversity protection
- Addressing climate change (mitigating heat island effect, CO2 absorption), etc.

Social and economic effects
- Fostering liveliness (community building, increasing the number of visitors to the city)
- Promotion of physical and mental health, etc.

[Internal economic value]
<Improvement of corporate/asset value>
- Increase corporate value by enhancing brand image, etc.
- Increase asset value through higher rents, etc.

[External economic value]
- Improve quality of life for citizens
- Establishment of a sustainable community

(5) Evaluation and certification systems

- ✓ Organize various third-party evaluation and certification systems from the perspective of green infrastructure, including major evaluation items and their relation to GRESB.

(6) Finance and credit

- ✓ Organize types and examples of financing methods such as sustainable finance and furusato nozei hometown tax donation system , and trends of J-credits and nature credits.

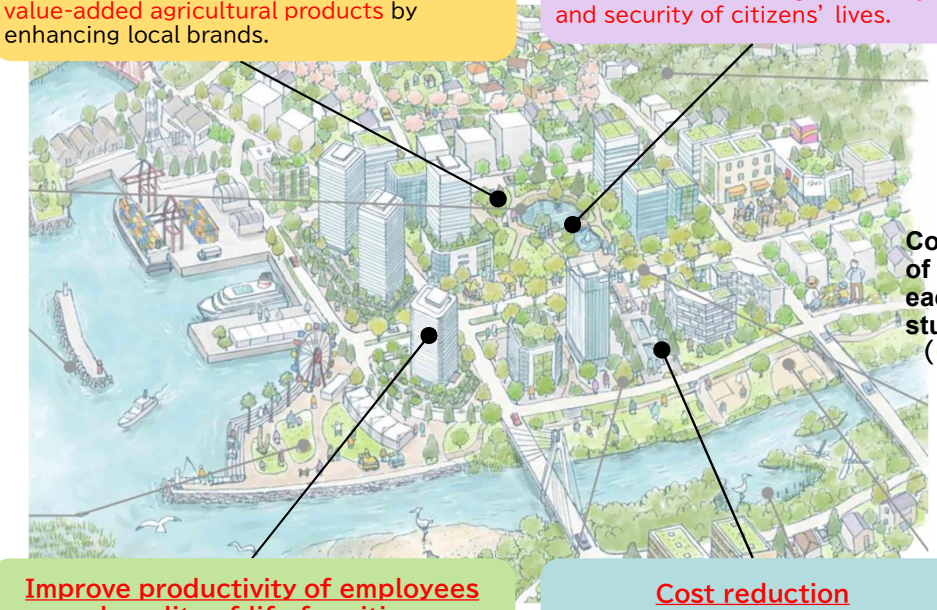
(Supplement: General Overview (3) Related)
Examples of Economic Effects of Green Infrastructure (1)

- Various effects of green infrastructure have been confirmed, depending on the nature of the initiatives, including economic effects such as an increase in the number of visitors, higher land prices, increased store sales, higher value-added agricultural products, improved labor productivity, and reduced costs, as well as social effects such as an improved quality of life and safety/security of the local community.
- Here, major examples of economic effects are summarized from the perspective of regional characteristics and main uses. In many cases, economic effects were achieved through dialogue with various parties by utilizing organizations that can serve as regional hubs, such as local governments and local financial institutions, and by emphasizing networks with existing green spaces.

Major economic effects of green infrastructure applications

Revitalization of the local economy
As the area is used as a new public space by local residents and tourists, the number of visitors to the area is expected to increase, thereby increasing the sales of nearby stores and raising land prices. In some cases, this will contribute to higher value-added agricultural products by enhancing local brands.

Reduction of flood risk
By improving rainwater storage and infiltration functions, it is expected to minimize flood damage to businesses and other entities. It is also expected to contribute to ensuring the safety and security of citizens' lives.



Improve productivity of employees and quality of life for citizens
There have been cases where the psychological stress of employees has been reduced, and their ability to concentrate has been improved, as well as cases where the quality of life for citizens has improved, and interest in nature conservation has been fostered.

Cost reduction
There have been cases where the load on sewage facilities has been reduced by controlling rainwater runoff and cases where controlling indoor temperature increases has contributed to the energy-efficient operation of A.C.

Confirmation of effects for each case study (●●●●)

Note: These effects are interrelated and cannot be strictly categorized.

Examples of green infrastructure in Japan show economic benefits in urban and living spaces.

Main use		Urban area	Rural area
Facility-related	Commercial and business facilities	●Futako Tamagawa Rise ●●Minami-machida Grandberry Park(*) ●●Tokyo Portcity Takeshiba(*) ●Azabudai Hills ●●●Otemachi Forest ●●Shinkashiwa Clinic and surrounding facilities	●●AEON MALL Toyokawa ●●Nigiwai no Mori(*) ●Kita Alps Shinano-no-Mori Water Plant ●Branch Moriya
	Logistics facilities	●ALFALINK Nagareyama	●●GLP Fukuoka Ogori
	Residential housing	●Sunvarie Sakurazutsumi ●●Green Infrastructure Model (Misawa Park Tokyo) ●●Matsubara Housing Complex	●●Kanon no Mori(*)
Infrastructure-related	Parks	●Minami-Ikebukuro Park ●Shin-Yokohama Park	—
	Roads /Streets	●OMIYA STREET PLANTS ●Shijo Rain Garden Development Project ●Marunouchi Street Park	—
Satoyama (village-vicinity woodland), Coast, etc.		—	●Maruyama River Direct River Improvement Project ●●Earthquake restoration and watershed area creation in Moune district, Kesennuma City ●●Sandy beach revitalization town development in Oya Beach
Underutilized land		●Kashiniwa Program	●Aohata Fruit Research Center

(*): See details on pages 3-4.

(Supplement: General Overview (3) Related)
Examples of Economic Effects of Green Infrastructure (2)

Example: Nigiwai no Mori (Inabe City, Mie Pref.)

Revitalization, Productivity /Quality

[Motive]

To establish a base for developing the community, human resources and to make use of abandoned forests

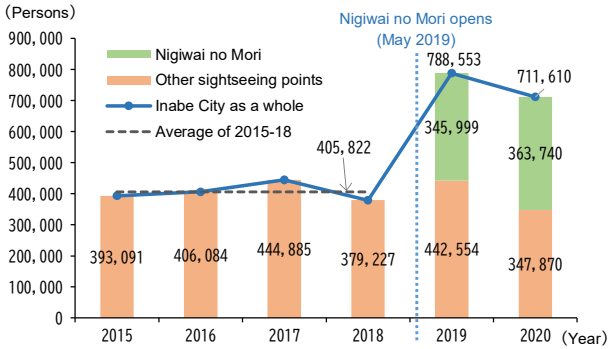
[Details of initiatives]

- In conjunction with the construction of the new government building, green space was created by utilizing existing trees in the abandoned forest nearby.
- Green Creative Inabe , a company established to promote public-private partnerships, manages and operates the facility.
- Design of commercial facilities, open space, and walkways within the green space.



[Economic effects]

- The number of visitors to Inabe City doubled following the opening of Nigiwai no Mori, contributing to a significant increase in the number of visitors. According to the questionnaire survey results, about 30% of the visitors to Nigiwai no Mori stopped by other facilities, thus suggesting that it is expected to enhance tourism in the local vicinity.



- About 72.1% of government office staff answered that "the scenery is good" as their impression of Nigiwai no Mori, which is the highest percentage. The impression by users of the facility was "comfortable" at 68.1%, which was the highest percentage.
- 28.0% of government office staff answered that they felt that using Nigiwai no Mori improved their work productivity. 49.2% of the respondents felt their productivity had increased compared to the previous building.

Source: Green Infrastructure Public-Private Partnership Platform (2024) "Collection of Practical Examples of Green Infrastructure , " Inabe City (2023) "Nigiwai no Mori Effectiveness Verification"

Example: Minami-machida Grandberry Park (Machida, Tokyo)

Revitalization, Risk reduction

[Motive]

Pursuing a new suburban approach to address regional issues such as the aging of old facilities and response to torrential rainfall.

[Details of initiatives]

- Roads that once segmented the city were reconfigured into a cohesive network of spaces, enabling barrier-free, comfortable pedestrian access from the station to nearby commercial facilities and city parks.
- Standardization of signages that enhance recognition of green infrastructure elements such as bioswales and rain gardens as unifying themes for the area
- Diverse plants, the majority of which are native to Japan, were introduced in pedestrian areas and plazas.

[Economic effects]

- The annual passenger count at the station rose to 133% YoY following the facility's inauguration. It has been quantitatively verified that the rain gardens and bioswales effectively infiltrate rainwater, thereby aiding in the management of rainwater runoff.

Sources: Green Infrastructure Public-Private Partnership Platform (2024) "Collection of Practical Examples of Green Infrastructure," Ministry of Land, Infrastructure, Transport and Tourism (2024) "Summary of Results of Development Support for Projects Promoting Green Infrastructure Creation ," Tokyu Corporation website "FY2018 Boarding Capacity" and "FY2019 Boarding Capacity"

(Supplement: General Overview (3) Related)
Examples of Economic Effects of Green Infrastructure (3)

Example: Tokyo Portcity Takeshiba (Minato Ward, Tokyo)

Productivity /Quality, Cost reduction

[Motive]

Proposals for work and lifestyle practices that capitalize on abundant natural resources, strategies for urban flood prevention, the development of cooling areas, and enhancing biodiversity.

[Details of initiatives]

- Building greening, wall greening
- Takeshiba New Eight Views , where vegetables can be cultivated without pesticides
- Adoption of native species based on surveys of habitat organisms in the surrounding area
- Establishment of open workspace with lush greenery (120 or more seats indoors and outdoors)

Reception space surrounded by greenery

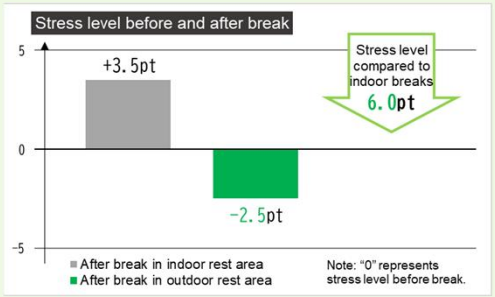
[Economic effects]

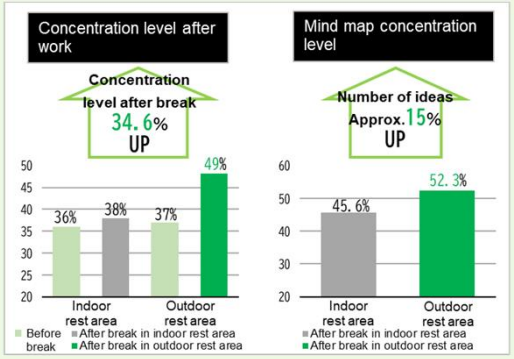
- An EEG study comparing the effects of working in environments with and without greenery showed a 12% decrease in stress levels and a 35% increase in concentration, leading to more positive inspiration. Additionally, by collecting rainwater for underground storage and reusing it for toilets and other needs, water consumption is expected to be reduced by about 4 to 5%.

Source: Green Infrastructure Public-Private Partnership Platform (2024) "Collection of Practical Examples of Green Infrastructure"

<(Reference) Examples in other urban developments>

It has been quantitatively confirmed that taking breaks in spaces with plants reduces stress and enhances concentration levels.
(Hibiya Park Front / Chiyoda Ward, Tokyo)





Source: TOKYU LAND CORPORATION website "GREEN WORK STYLE"

Example: Kanon no Mori (Kumagaya, Saitama Pref.)

Productivity /Quality, Cost reduction

[Motive]

Addressing severe heat, decrease in the amount of greenery, and lack of greenery awareness activities.

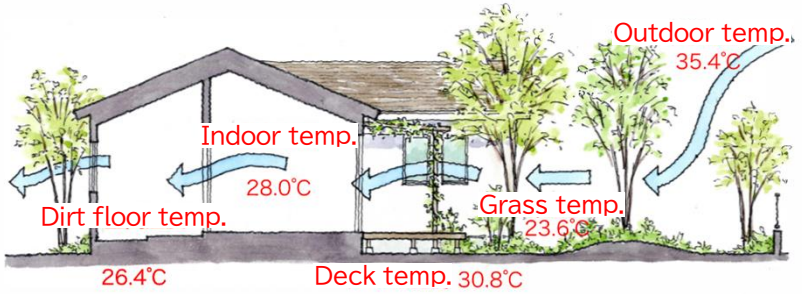
[Details of initiatives]

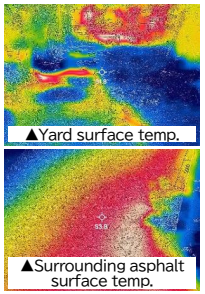
- In the shop-cum-residence, the architecture and garden are designed as a cohesive unit to naturally regulate temperature—maximizing airflow from southern breezes in the summer and minimizing northern winds in the winter, thereby reducing the need for A.C.
- Deciduous jolcham oak trees are planted around the property to provide shade during the summer and allow sunlight through during the winter as they shed their leaves.
- Monthly workshops offer participants practical lessons on integrating nature into daily living.

[Economic effects]

- Participants report significant lifestyle improvements from monthly classes on herb cultivation and culinary uses, indicating these activities have contributed to establishing their healthy and comfortable lifestyles.

- These practices foster a healthy living environment, enabling residents to comfortably forgo A.C. even during intense summer heat. As the vegetation matures, the green coverage increases annually, enhancing shade and comfort with each passing year.





Source: Green Infrastructure Public-Private Partnership Platform (2024) "Collection of Practical Examples of Green Infrastructure"

(Supplement: General Overview (4)-(a) Related)
Existing Studies on Green Premium

- Various domestic and international studies have explored the relationship between environmental real estate and the Green Premium, noting positive effects on prices, rents, and yields. Research examining the impact of nearby green spaces on real estate values has also been conducted.

■Relationship between environmental real estate and real estate values

(Environmental real estate: Properties characterized by high energy efficiency and CO2 reduction capabilities)

<Studies on selling prices>

[Research compilation]

Organized 71 peer-reviewed empirical studies focusing on the Green Premium for income-generating real estate properties. Out of 19 studies specific to sales price premiums, 13 confirmed a premium ranging from +4.75% to +43%. (Leskinen, N. et al., 2020)

<Studies on rent>

[U.S. office market]

Research indicates that the potential for higher rents (3%) in green buildings motivates investors to pursue such developments despite the higher initial costs . (Eichholtz et al., 2010; U.S.)

[Chiyoda, Chuo, Minato, Shinjuku, Shibuya Ward, Tokyo]

Comparisons conducted before and after buildings acquired environmental certifications (such as CASBEE, DBJ Green Building, and BELS) show that a top-tier rating results in a rent increase of 4.6%. (Sumitomo Mitsui Trust Bank, 2024)

<Studies on yield and risk reduction>

[Research compilation]

While empirical studies are scarce, they suggest an average reduction in capitalization yields of about 0.46 percentage points, with variations from 0.36 to 0.55 percentage points.

→Capitalization yields reflect market expectations regarding the future position of sustainability (Chaney and Hoesil, 2015).

■Relationship between real estate values and surrounding green space

[New York City]

Office properties with low to high degrees of street greening, compared to those with significantly low degrees, command transactions with transaction premiums from 8.9% to 10.5%, and rent premiums from 5.6% to 7.8%. (Juncheng Yang et al., 2020)

[New York City]

Community gardens within 300m notably boost real estate selling prices. Especially in less affluent areas (an increase in real estate value of 9.4%). (Voicu, I., & Been, V., 2008).

[Setagaya and Suginami Ward, Tokyo]

A 10% increase in scattered green spaces within a 100-meter radius can elevate average condominium prices by 2 to 2.5% (JPY740,000 to JPY930,000). (Kuroda et al., 2023)

[Edogawa Ward, Tokyo]

Linear green spaces increase land prices by a minimum of JPY0.07/m^2 per square meter of green space, whereas parks boost land prices by at least JPY0.01/m^2 per square meter of green space. (Watanabe et al., 2012)

[Sapporo, Hokkaido]

An expansion of 10m^2 in the nearest park correlates with a land price increase of about JPY0.18/m^2. Furthermore, a 10% increase in green space within a 500-meter radius is associated with a land price rise of approx. 0.55%. (Aikoh et al., 2008).

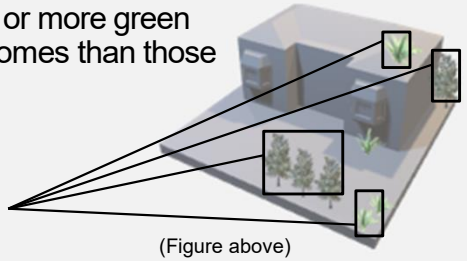
(Supplement: General Overview (4)-(b))
New Economic Value Analysis (On-site Green Infrastructure and Real Estate Value)

- While there has been a great deal of research on the relationship between the existence of green space around a property and the value of the property (transaction value, etc.), there have been few studies analyzing the relationship between the green space on the property and the value of the property; thus, this study group researched the relationship between the green infrastructure on the property and the value of the property.
- The analysis primarily focused on quantitatively evaluating corporate assets and profits in the real estate sector by examining the relationship between the end-of-term monthly rental income of properties and the percentage of green space on the property. A hedonic pricing approach was utilized to conduct a present state analysis of these factors (specifically targeting REIT properties located within the 23 wards of Tokyo).
- The analysis revealed that, while significant results were not obtained for the variables related to green infrastructure in the central 23 wards of Tokyo, a notable difference was observed in the central 5 wards (Chiyoda, Minato, Chuo, Shinjuku, and Shibuya). Properties with 10% or more green space within their premises demonstrated approx. 7.4% higher monthly rental income (per tsubo) than properties with less than 10% green space. Furthermore, office properties with 10% or more green space achieved 12.4% higher rental incomes than those with less than 10% green space.

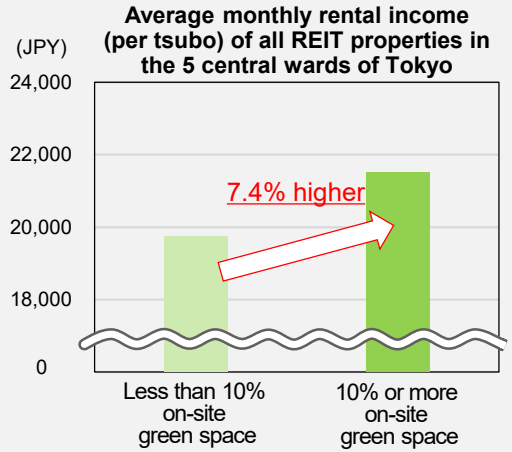
■ Analysis results

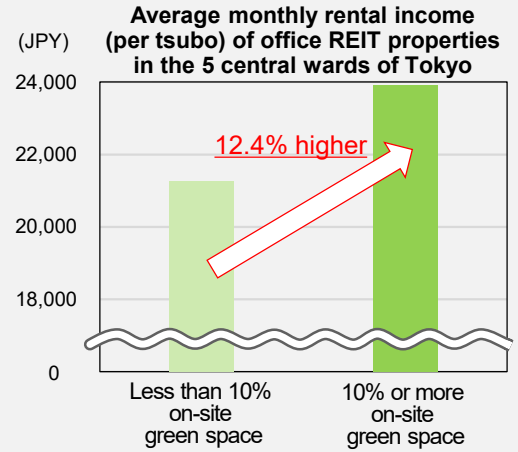
- The analysis indicated that the green infrastructure variable showed no significant effects across the 23 central wards of Tokyo.
- However, in the 5 central wards of Tokyo, properties with 10% or more on-site green space reported a 7.4% higher monthly rental income (per tsubo) than those with less than 10% green space.
- Furthermore, office properties with 10% or more green space achieved 12.4% higher rental incomes than those with less than 10% green space.

The green space visible in the aerial photograph is classified as "on-site green space."



(Figure above)
Image depicting 10% on-site green space





Note: Average values for each criterion are used for the graph data.

■ Analysis flow

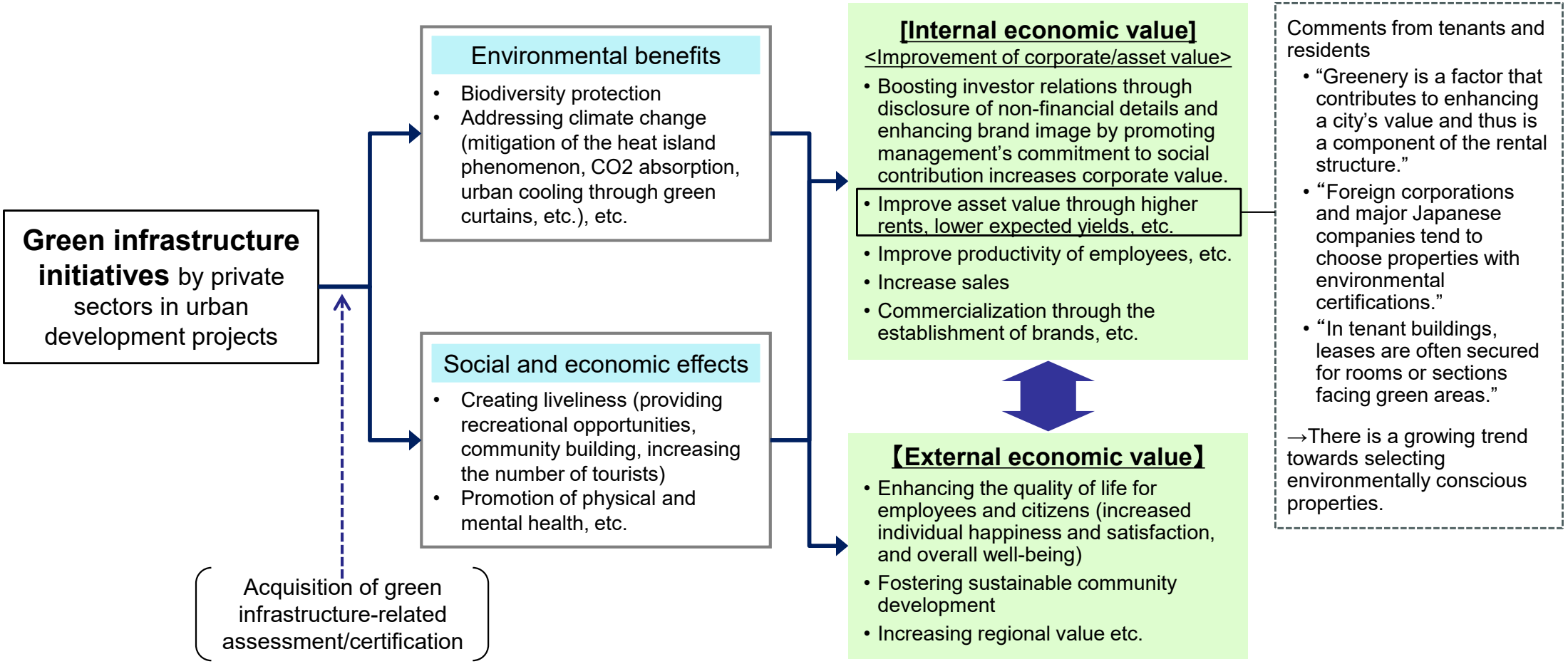
- Collection of real estate data and data on on-site green space
- Setting variables for analysis (dummy variables, logarithmization of numerical values)
- Data cleaning, filtering, and processing of anomalies
- Combine each variable (total floor area, floor area ratio, age of building, etc.) and perform multiple regression analysis
- Discussion of analysis results

■ Limitations and challenges of this study

- **Biased real estate information in REITDB data**
  In J-REIT, the data primarily comprises small- and medium-scale properties, leading to the underrepresentation of large-scale property trends. This may result in biased outcomes.
- **Discrepancy between greening area and visible greenery**
  Aerial photographs used in the data do not capture all greenery, hence creating a gap between the actual green area ratio and the numbers shown in the data. Moreover, the volume of greenery was not considered in this analysis.
- **Consideration of qualitative characteristics of green spaces**
  The analysis has not considered the quality of plant management, wildlife habitats, or the creation of community spaces. Future analysis will need to incorporate these qualitative characteristics.

(Supplement: General Overview (4)-(c)
Ripple Effects on Economic Value from Promoting Green Infrastructure

- In urban development and community building, utilizing green infrastructure can lead to internal economic benefits for businesses, including enhanced corporate assets and profits. Expected outcomes are increased corporate value through improved brand image, etc., and greater asset values through higher rental incomes and lower capitalization rates , etc. Moreover, applying green infrastructure benefits not only the internal economics of businesses but also positively affects external economic values, such as enhancing citizens' well-being and boosting regional value.
- These aspects are interconnected; improvements in external economic values can further elevate a brand's image, boosting internal economic values.



(Reference) “Green Infrastructure Promotion Strategy 2023” (published by Ministry of Land, Infrastructure, Transport and Tourism in September 2023)

◆Green Infrastructure Promotion Strategy 2023

In September 2023, the Ministry of Land, Infrastructure, Transport and Tourism released its “Green Infrastructure Promotion Strategy 2023,” detailing its vision and initiatives for promoting and implementing green infrastructure across various sectors, with collaborative efforts from both public and private sectors.

Definition of green infrastructure
(Green Infrastructure Promotion Strategy 2023)

=

Green Infrastructure is a nature-based initiative to create sustainable and attractive national land, cities, and regions in both tangible and intangible aspects, such as social infrastructure development and land use.

Overview of Green Infrastructure Promotion Strategy 2023

○ As the concept of green infrastructure has solidified and moved into a full-scale implementation phase. In response to global trends such as Nature Positive, carbon neutral, and GX, the previous Green Infrastructure Promotion Strategy (July 2019) has been thoroughly revised. Consequently, a new “Green Infrastructure Promotion Strategy 2023” was formulated.
○ This strategy introduces a new vision and fresh perspectives on initiatives, comprehensively and systematically outlining the Ministry of Land, Infrastructure, Transport and Tourism’s efforts to promote and establish green infrastructure across various fields and circumstances, with coordinated efforts from both public and private sectors.

Global trends

○Nature Positive
- Kunming-Montreal Global Biodiversity Framework (December 2022)
- National Biodiversity Strategy and Action Plan of Japan (March 2023, approved by the Cabinet)

○Carbon Neutral
- Carbon Neutral Declaration (October 2020)
- GX Promotion Act enacted (May 2023)

Expectations for green infrastructure

○Solutions to issues in social capital development, urban planning, etc.
- Increasing severity and frequency of disasters
- Aging infrastructure
- Demand for attractive and relaxing cities and living spaces
- Change in land use due to declining population

○Realizing a new society
- SDGs
- Well-being
- One Health
- Children-centered society
- Regional development (The Vision for a Digital Garden City Nation)

○Application based on affinity with Japanese history and culture

The ideal vision of green infrastructure: Society living in harmony with nature
Significance of green infrastructure: (1) Contribute to Nature Positive, carbon-neutral, etc. (2) Improve and enhance the quality and functionality of social infrastructure and community development(3) Contribute to SDGs and regional development

1) A society where people can live in safety and security, supported by the power of nature (Safety and security)
2) A society where individuals live healthily and comfortably in nature, engaging creatively and enjoyably in their activities (Town)
3) A society where comfort and connection are fostered through nature, enabling children to grow up healthy (People)
4) A society enriched and vibrant through regional revitalization that leverages natural resources (Work)

The 7 perspectives for Green Infrastructure being built into all fields and situation

Collaboration | Community | Technology | Evaluation | Financing | Global | Digital

- Promoting watershed flood control utilizing the capabilities of the natural environment
- Measures involving urban greening and the development of city parks to enhance absorption sources
- Establishment of rain gardens and rainwater harvesting/infiltration facilities
- Promoting the use of timber in buildings, etc.

- Creating comfortable and inviting places to walk in town
- Creating urban spaces rich in nature and forming a real estate investment market considering environmental performance
- Promoting greening of houses, buildings, road spaces, and underutilized lands, etc.

- Promoting environmental education
- Securing nature-rich playgrounds
- Development of a riverside town , Nature-oriented River Management
- Blue Infrastructure Expansion Project
- Fostering green infrastructure communities, etc.

- Promoting development of scenic and historical towns
- Promoting sustainable tourism that brings about a virtuous cycle in local communities/economies and preserves natural, cultural, and other tourism resources
- Utilization of carbon credits, etc.

Promoting initiatives involving diverse stakeholders from industry, academia, government, and finance (Deepening the efforts of the GI Public-Private Partnership Platform for Green Infrastructure, etc.)

Establishing practical evaluation and certification methods (Establishment of an evaluation system for green infrastructure such as urban green spaces, collaboration with TNFD*, etc.)

Promoting the development and utilization of new technologies (Development of new technologies, development of digital infrastructure information on natural capital, etc., and their positioning in various technical guidelines, etc.)

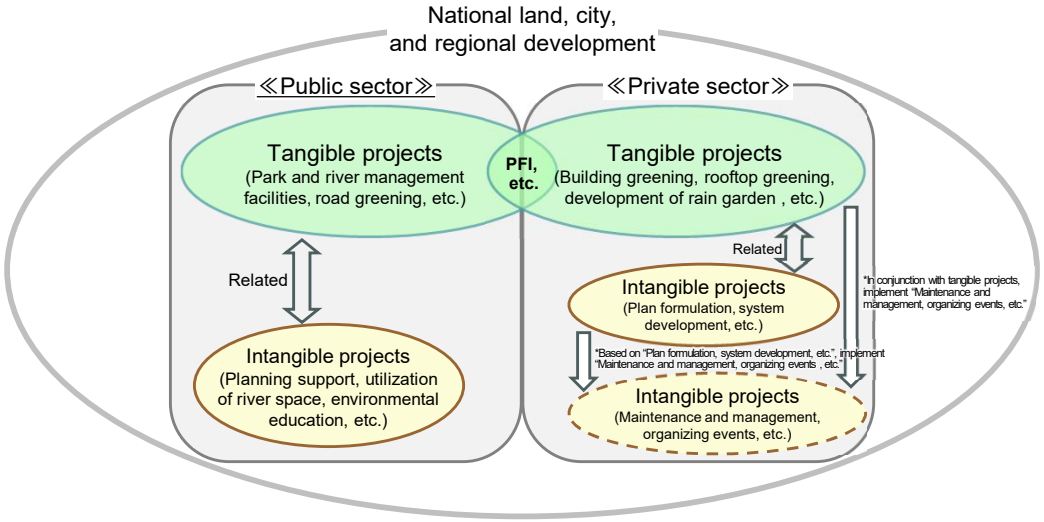
Enhancing support (Comprehensive grants for social infrastructure development, grants for disaster prevention and safety, etc.)

Launch national campaigns in collaboration with the GI Public-Private Partnership Platform for Green Infrastructure and economic organizations

Establish a medium-term roadmap/annual follow-up

*TNFD: Taskforce on Nature-related Financial Disclosures

- Green infrastructure extends beyond public projects, encompassing initiatives that private companies, organizations, and citizens can all participate in.
- Public initiatives include the development of urban parks and green breakwaters as tangible projects and formulating various plans related to greenery as intangible projects. Private sector initiatives encompass on-site greening in private urban development as tangible projects and environmental education led by the private sector as intangible projects.
- Green infrastructure offers benefits beyond individual gains, such as enhancing societal sustainability, making it crucial to promote initiatives through public-private partnerships.



Note: The above “tangible” and “intangible” projects are limited to those that utilize (or are intended to utilize) the diverse functions of the natural environment.

～ Tangible projects that fall under green infrastructure
～ Intangible projects that fall under green infrastructure

Overview of Green Infrastructure Promotion Strategy 2023

○ As the concept of green infrastructure has solidified and moved into a full-scale implementation phase. In response to global trends such as Nature Positive, carbon neutral, and GX, the previous Green Infrastructure Promotion Strategy (July 2019) has been thoroughly revised. Consequently, a new “Green Infrastructure Promotion Strategy 2023” was formulated.

○ This strategy introduces a new vision and fresh perspectives on initiatives, comprehensively and systematically outlining the Ministry of Land, Infrastructure, Transport and Tourism’s efforts to promote and establish green infrastructure across various fields and circumstances, with coordinated efforts from both public and private sectors.

Global trends

○Nature Positive
- Kunming-Montreal Global Biodiversity Framework (December 2022)
- National Biodiversity Strategy and Action Plan of Japan (March 2023, approved by the Cabinet)

○Carbon Neutral
- Carbon Neutral Declaration (October 2020)
- GX Promotion Act enacted (May 2023)

Expectations for green infrastructure

○Solutions to issues in social capital development, urban planning, etc.
- Increasing severity and frequency of disasters
- Aging infrastructure
- Demand for attractive and relaxing cities and living spaces
- Change in land use due to declining population

○Realizing a new society
- SDGs
- Well-being
- One Health
- Children-centered society
- Regional development (The Vision for a Digital Garden City Nation)

○Application based on affinity with Japanese history and culture

The ideal vision of green infrastructure: Society living in harmony with nature

Significance of green infrastructure: (1) Contribute to Nature Positive, carbon-neutral, etc. (2) Improve and enhance the quality and functionality of social infrastructure and community development(3) Contribute to SDGs and regional development

1) A society where people can live in safety and security, supported by the power of nature (Safety and security)	2) A society where individuals live healthily and comfortably in nature, engaging creatively and enjoyably in their activities (Town)	3) A society where comfort and connection are fostered through nature, enabling children to grow up healthy (People)	4) A society enriched and vibrant through regional revitalization that leverages natural resources (Work)

The 7 perspectives for Green Infrastructure being built into all fields and situation

Collaboration / Community / Technology / Evaluation / Financing / Global / Digital

1) A society where people can live in safety and security, supported by the power of nature (Safety and security)

- Promoting watershed flood control utilizing the capabilities of the natural environment
- Measures involving urban greening and the development of city parks to enhance absorption sources
- Establishment of rain gardens and rainwater harvesting/infiltration facilities
- Promoting the use of timber in buildings, etc.


Toshima Green Disaster Prevention Park (IKE-SUNPARK) (Toshima Ward, Tokyo)

Tsurumi River Multipurpose Retarding Basin (Yokohama, Kanagawa Pref.)

2) A society where individuals live healthily and comfortably in nature, engaging creatively and enjoyably in their activities (Town)

- Creating comfortable and inviting places to walk in town
- Creating urban spaces rich in nature and forming a real estate investment market considering environmental performance
- Promoting greening of houses, buildings, road spaces, and underutilized lands, etc.


Futako Tamagawa Rise bustling with many people (Setagaya Ward, Tokyo)


Otemachi Forest (Chiyoda Ward, Tokyo)

3) A society where comfort and connection are fostered through nature, enabling children to grow up healthy (People)

- Promoting environmental education
- Securing nature-rich playgrounds
- Development of a riverside town , Nature-oriented River Management
- Blue Infrastructure Expansion Project
- Fostering green infrastructure communities, etc.


Elementary school students participating in a biology observation event along the Hori River (Nagoya, Aichi Pref.)


Maintenance and management of green space by local residents (Mitsuke, Niigata Pref.)

4) A society enriched and vibrant through regional revitalization that leverages natural resources (Work)

- Promoting development of scenic and historical towns
- Promoting sustainable tourism that brings about a virtuous cycle in local communities/economies and preserves natural, cultural, and other tourism resources
- Utilization of carbon credits, etc.


Kirin Brewery Yokohama (Yokohama, Kanagawa Pref.)


Carbon credit system based on blue carbon ecosystem (Shunan, Yamaguchi Pref.)

Promoting initiatives involving diverse stakeholders from industry, academia, government, and finance (Deepening the efforts of the GI Public-Private Partnership Platform for Green Infrastructure, etc.)

Establishing practical evaluation and certification methods (Establishment of an evaluation system for green infrastructure such as urban green spaces, collaboration with TNFD*, etc.)

Promoting the development and utilization of new technologies (Development of new technologies, development of digital infrastructure information on natural capital, etc., and their positioning in various technical guidelines, etc.)

Enhancing support (Comprehensive grants for social infrastructure development, grants for disaster prevention and safety, etc.)

Launch national campaigns in collaboration with the GI Public-Private Partnership Platform for Green Infrastructure and economic organizations

Establish a medium-term roadmap/annual follow-up

*TNFD: Taskforce on Nature-related Financial Disclosures