

Trends Concerning Land in FY2015
Basic Measures in Relation to Land in FY2016

Abstract

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Ministry of Land, Infrastructure, Transport and Tourism

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“Trends Concerning Land in FY2015” and “Basic Measures in Relation to Land in FY2016” are created based on the provisions of Article 10, paragraphs (1) and (2) of the Basic Act for Land (Act No. 84 of December 22, 1989).

“Trends Concerning Land in FY2015”

Part 1 Trends Concerning Land

Chapter 1 Trends in Land Prices and Land Transactions in FY2015

The Japanese economy in fiscal 2015 continued a moderate recovery in the context of improved employment and income environment, and better terms of trade, thanks to the decline in the prices of crude oil and other factors.

Section 1 Economic Situation Surrounding the Real Estate Market in Japan

(Changes in GDP)

Influenced by the slowdown of emerging economies including China and other factors, Japan's real GDP experienced negative growth in the April-June quarter of 2015 compared with the preceding quarter, turned to positive in the July-September quarter, but returned to negative in the October-December quarter.

(Trends in corporations)

The fund-raising environment of corporations continued to improve in the context of expansion of monetary easing by the Bank of Japan. The sense of equipment overcapacity among companies had been falling since 2009 in both manufacturing and non-manufacturing industries, but remained almost unchanged in 2015.

(Trends in households)

Concerning the labor environment, employer's perceptions regarding excesses in employment have improved since the July–September quarter of 2009 and the employer perception that there is a labor shortage became a stronger trend in fiscal 2015 than in the previous fiscal year. Active opening rate also has been rising since the July–September quarter of 2009.

In regard to consumption by households, private final consumption expenditure that had been falling compared with the preceding quarter up to the January-March quarter of 2015 in reaction to rush demand ahead of the rise in the consumption tax and other factors increased compared with the preceding quarter in the July-September quarter of 2015 but declined again in the October-December quarter.

Section 2 Trends in Land Prices

Publication of the land values of standard sites in 2016 (“2016 Publication”) showed a decline in the national average volatility of residential land, but the rate of decline contracted, and that of commercial land turned upward (0.9%) from being flat (0.0%). The values of all sites turned upward for the first time in eight years since 2008.

The average volatility of the three major metropolitan areas showed a slight increase, unchanged from the previous year, in residential land, while that of commercial land has been on an upward trend for three consecutive years.

In other areas, the average volatility continued to decline in both residential and commercial land, but the rate of decline contracted. The average of four cities – Sapporo, Sendai, Hiroshima and Fukuoka – showed an increase exceeding the increase of the three major metropolitan areas in both residential and commercial land.

Looking at the changes by the use of land, residential land prices generally remained steady, while the employment conditions continued to improve nationwide.

The profitability of commercial land is generally improving as the demand for stores, hotels and the like was strong in central parts of cities along with the increase of foreign tourists and other visitors from in and outside Japan, and office building vacancy rates generally continuing to decline and rents improving in some areas. In this context, willingness to invest in real estate was strong and commercial land prices were generally firm, partly because the financing environment was favorable for corporate investors and others due to monetary relaxation.

Chart: Fluctuation in land prices (year-on-year)

	Residential land			Commercial land			All sites		
	2014 Publication	2015 Publication	2016 Publication	2014 Publication	2015 Publication	2016 Publication	2014 Publication	2015 Publication	2016 Publication
National	-0.6	-0.4	-0.2	-0.5	0.0	0.9	-0.6	-0.3	0.1
Three major metropolitan areas	0.5	0.4	0.5	1.6	1.8	2.9	0.7	0.7	1.1
Tokyo area	0.7	0.5	0.6	1.7	2.0	2.7	0.9	0.9	1.1
Osaka area	-0.1	0.0	0.1	1.4	1.5	3.3	0.2	0.3	0.8
Nagoya area	1.1	0.8	0.8	1.8	1.4	2.7	1.2	0.9	1.3
Areas other than Tokyo, Osaka and Nagoya	-1.5	-1.1	-0.7	-2.1	-1.4	-0.5	-1.7	-1.2	-0.7
Sapporo/Sendai/Hiroshima/Fukuoka	1.4	1.5	2.3	2.0	2.7	5.7	1.6	1.8	3.2
Others	-1.8	-1.3	-1.0	-2.6	-1.8	-1.3	-2.1	-1.5	-1.1

Source: "Publication of value of standard sites" Ministry of Land, Infrastructure, Transport and Tourism

Note 1: Regional classifications are as follows:

Three major metropolitan areas: Tokyo area, Osaka area, and Nagoya area.

Tokyo area: A group of municipalities that include existing urban areas and suburban development areas provided by the national Capital Region Development Act.

Osaka area: A group of municipalities that include existing urban areas and suburban development areas provided by the Kinki Region Development Act.

Nagoya area: A group of municipalities that include urban areas provided by the Chubu Region Development Act.

Areas other than Tokyo, Osaka and Nagoya areas: Those other than the three major metropolitan areas.

Other: Areas of municipalities other than Sapporo, Sendai, Hiroshima and Fukuoka among local district areas

Note 2: 2011 Publication: from January 1, 2010, to January 1, 2011

2012 Publication: from January 1, 2011, to January 1, 2012

2013 Publication: from January 1, 2012, to January 1, 2013

2014 Publication: from January 1, 2013, to January 1, 2014

2015 Publication: from January 1, 2014, to January 1, 2015

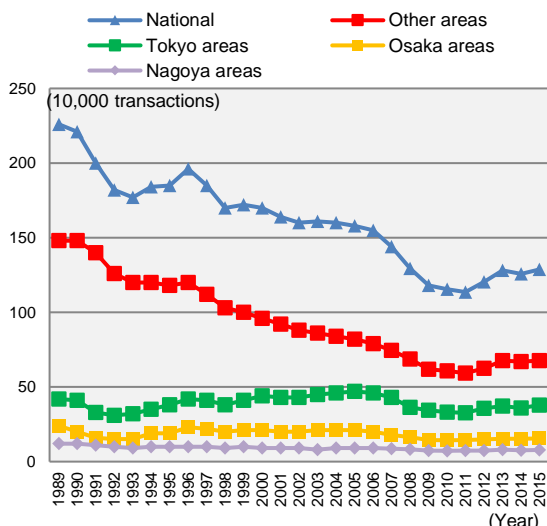
Note 3: The drop ratio decreased or the appreciation rate increased from the previous year. The drop ratio increased or the appreciation rate decreased from the previous year. Same ratio of change from the previous year

Section 3 Trends in Land Transactions

(Changes in the number of land transactions, etc.)

The trends in land transactions are followed by the number of transfers of ownership registered through buying and selling. The number of land transactions increased to 1.287 million in 2015 (up 2.4% from the previous year). In terms of year-on-year quarterly changes, the number was positive in every region for the full year.

Chart: Changes in the number of land transactions through buying and selling



Source: Created based on "Statistics on Registration" Ministry of Justice

Note: Regional classifications are as follows:

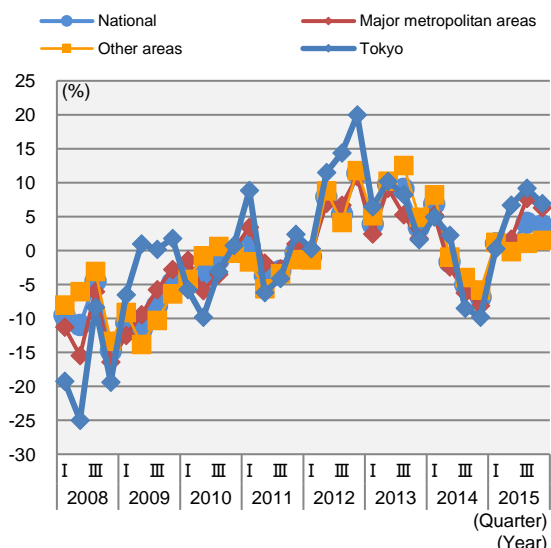
Tokyo areas: Saitama, Chiba, Tokyo and Kanagawa Prefectures

Nagoya areas: Aichi and Mie Prefectures

Osaka areas: Osaka, Kyoto and Hyogo Prefectures

Other areas: areas other than above.

Chart: Changes in the variation (year-over year) of land transaction through buying and selling



Source: Created based on "Statistics on Registration" Ministry of Justice

Note 1: The numbers of land transactions are those of transfers of ownership concerning land through buying and selling.

Note 2: Regional classifications are as follows:

Major metropolitan areas: Saitama, Chiba, Tokyo, Kanagawa, Aichi, Mie, Kyoto, Osaka and Hyogo Prefectures

Other areas: areas other than above.

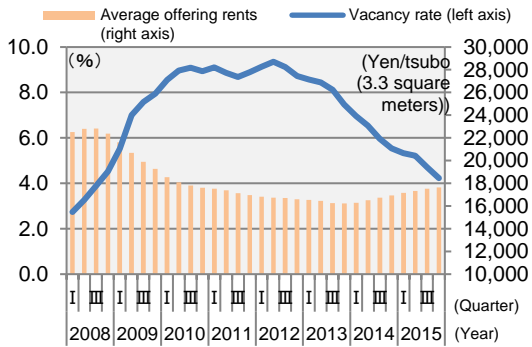
(Perception of land transactions by corporations)

According to the Survey of Land Transaction Trend conducted by the Ministry of Land, Infrastructure, Transport and Tourism, the diffusion index (DI: the ratio of corporations responding that transaction activity is “vibrant” minus the ratio of corporations responding that it is “sluggish”) regarding the perception of the current land transaction situation at the location of headquarters was mostly flat for Tokyo’s 23 wards while that for Osaka and other regions increased.

Chart: Changes in office building rents and vacancy rates (five inner-city wards)

(Trends in the office market)

Against the background of the increased demand for rental offices, the vacancy rate continued to decline in the five inner-city wards of Tokyo, dropping to 4.2% in the October-December quarter of 2015. Average offering rents continued to rise since the January-March quarter of 2014.



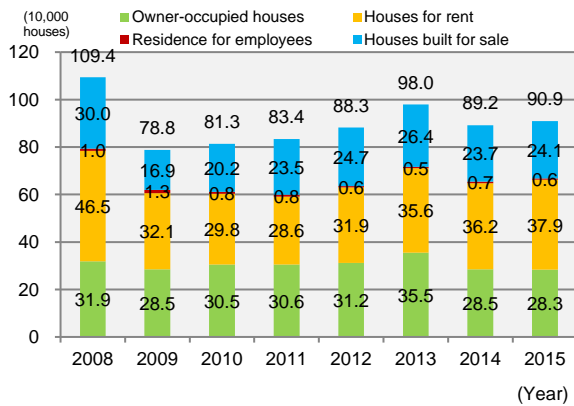
Source: Miki Shoji Co., Ltd.

(Trends in the residential market)

The total number of new housing starts turned upward to 909,299 units in 2015, up 1.9% from the previous year, but down 7.2% from two years ago, when the number was strongly influenced by rush demand ahead of the rise in consumption tax.

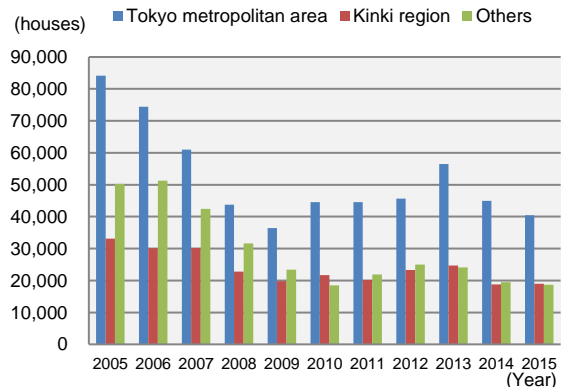
Comparing the number of new sales with that of the previous year as an indication of the condominium market trend, the number for the nation was 78,809 units (down 6.1% from the previous year) while the number for the Tokyo metropolitan area was 40,449 units (down 9.9% from the previous year) and that for the Kinki region was 18,930 units (0.6% increase from the previous year). In terms of year-on-year quarterly changes, the number for the Tokyo metropolitan area turned upward in the July-September quarter of 2015, while the number for the Kinki region started to pick up in the January-June term of 2015.

Chart: Change in the number of new housing starts by use form



Source: "Statistical survey on construction starts"

Chart: Changes in the number of new condominium sales by region



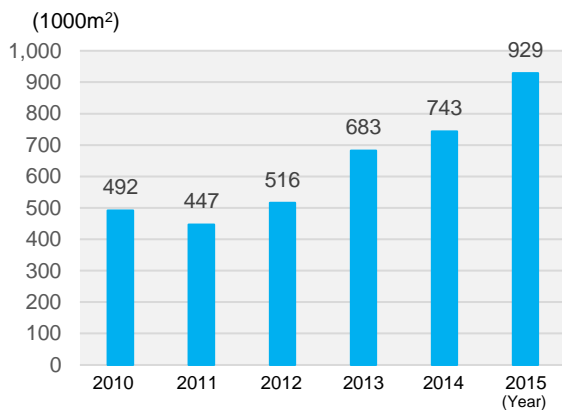
Source: Created based on "National Condominium Market Report" Real Estate Economic Institute Co., Ltd.

Note: Regional classifications are as follows:
 Tokyo metropolitan area: Saitama prefecture, Chiba prefecture, Tokyo, and Kanagawa prefecture.
 Kinki region: Shiga prefecture, Kyoto prefecture, Osaka prefecture, Hyogo prefecture, Nara prefecture, and Wakayama prefecture

(Trends in Other Real Estate Markets)

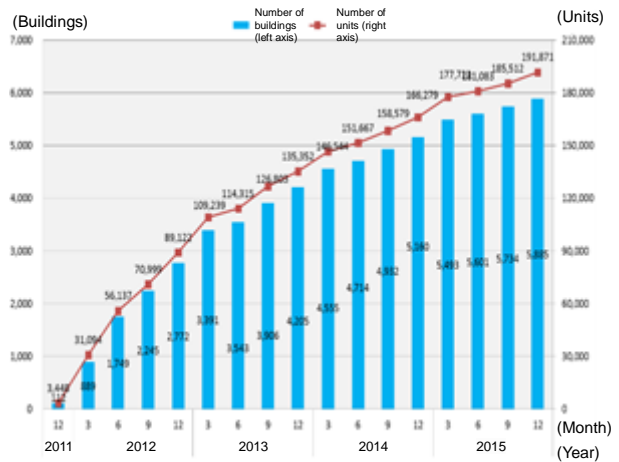
The floor area of new construction of accommodation facilities in 2015 was 929,000m², up 25.1% from the previous year. The number of registered buildings for elderly housing with support services is 5,885 with 191,000 units as of December 2015, more than three years after the establishment of the registration system.

Chart Floor area of new construction of accommodation facilities



Source: created based on the "Statistical survey on construction starts"
 Note: "M - Restaurants and buildings for accommodation business"
 Total floor area of buildings classified into "53 - facilities for accommodation business"

Chart Trends in registration of elderly housing with support services



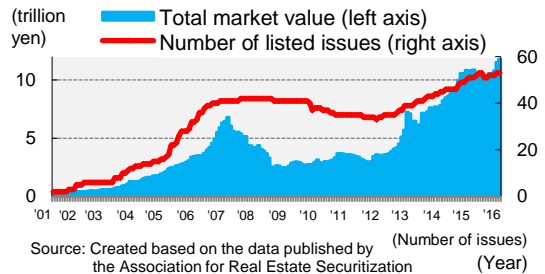
Source: Created based on MLIT's data

Section 4 Trends in the Real Estate Investment Market

(Trends in the J-REIT market)

In fiscal 2015, new listings of six investment corporations on the Tokyo Stock Exchange changed the number of different stocks of J-REIT to 53 as of the end of March 2016. The current aggregate market value reached about 12 trillion yen at the end of March 2016.

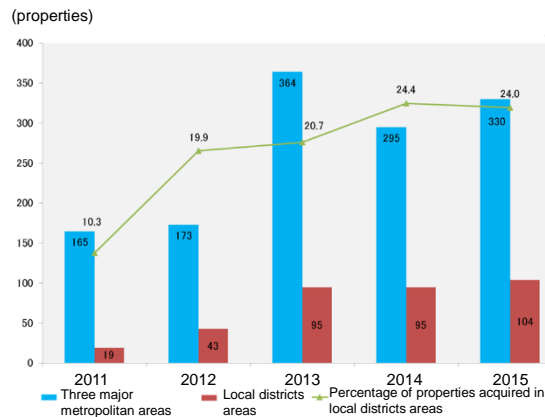
Chart: Changes in the number of listed REIT issues and their total market value



(Real estate investments in local district areas)

Looking at the progress of real property securitization in local district areas, 104 of the 434 properties acquired by J-REIT across Japan in 2015 were in local district areas other than the three major metropolitan areas. The number increased for five consecutive years but the ratio to the total acquired properties was about one quarter.

Chart: Changes in the number of properties acquired by J-REIT by area and the ratio of properties in local district areas



Section 5 Trends in Land Use

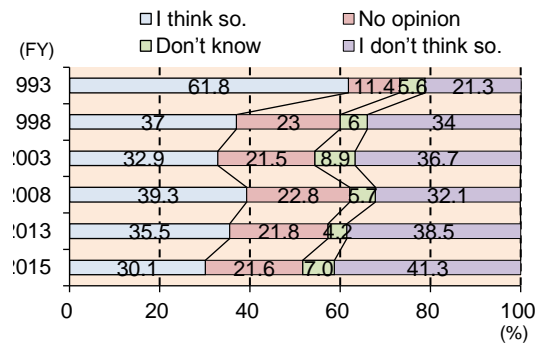
As of 2014, the total area of Japan was approximately 37.80 million hectares. Forestland accounts for the largest portion (25.06 million hectares), followed by agricultural land (4.52 million hectares), thus marking a decrease from the preceding year. When combined, forestland and agricultural land account for about 80% of the national land area. In addition, developed land, such as residential and industrial land, amounts to 1.93 million hectares, roads occupy 1.38 million hectares, surface water, rivers, and canals cover 1.34 million hectares, and fields total 0.35 million hectares.

Section 6 Situation and Perceptions of Land among Corporations and Households

(Situation and perceptions of ownership of land/house among households)

According to “Survey on the Public Attitude Toward Land Issues” conducted by MLIT every year, the percentage of people answering “yes” to the question “Do you think land is a profitable asset compared with deposits/savings or stocks?” was over 60% in fiscal 1994 but the percentage declined year to year remaining at the 30% level since 1998 and falling to 30.1% in 2015, the lowest since the start of the survey.

Chart: Do you think land is a profitable asset compared with deposits/savings or stocks?



Chapter 2 Present State of Land Use in the Disaster Areas Five Years after the Great East Japan Earthquake

Five years have passed since March 11, 2011, when the Great East Japan Earthquake occurred. There have been various changes in land use in disaster areas concentrated in Tohoku with the advancement of recovery and reconstruction efforts, including house reconstruction and town development.

This Chapter summarizes the present state of recovery and reconstruction in Section 1 and outlines the influence of the earthquake on the real estate market and land use based on various statistics data in Section 2. Next, Section 3 examines the influence of the earthquake on the public perception of real estate. Lastly, Section 4 takes up specific efforts made by local governments and others toward recovery/reconstruction as they are taking shape, changes in land use in disaster areas and various ideas concerning land use in these efforts.

Section 1 State of Recovery and Reconstruction from the Great East Japan Earthquake

(Progress of recovery/reconstruction pertaining to land use)

The number of the evacuees was about 470,000 just after the earthquake, but has decreased to about 174,000 as of February 12, 2016. Many of them are living in temporary houses or similar facilities. The number of households living in temporary houses is declining along with the progress of reconstruction of homes and moves to permanent houses.

The reconstruction of homes has moved from the stage of planning and land acquisition to the stage of construction. Construction has started in almost all districts that are planned for relocation to higher ground, and land has been secured for over 90% of the planned disaster public housings.

Recovery and reconstruction of public infrastructure are advancing steadily based on the reconstruction project plans and work schedule.

(Trends in land use in the three afflicted prefectures)

Looking at the trends in land use in each of the three afflicted prefectures in the

Chart: Trends in land use in the three afflicted prefectures

Prefecture	Use category	Area (km ²)			Percent change (%)
		2014	2010	Changes	
Iwate	Farmland	1,515	1,539	-24	-1.6
	Wilderness, etc.	84	85	-1	-1.2
	Roads	452	448	4	0.9
	Housing land	358	346	12	3.5
Miyagi	Farmland	1,301	1,363	-62	-4.6
	Wilderness, etc.	37	39	-2	-5.2
	Roads	325	321	4	1.3
	Housing land	457	460	-3	-0.6
Fukushima	Farmland	1,445	1,499	-54	-3.6
	Wilderness, etc.	65	67	-2	-2.6
	Roads	524	517	7	1.4
	Housing land	491	483	8	1.6

Source: MLIT

*1 Since 2011, the areas of Iwate and Fukushima prefectures have been corrected by adding the areas subject to tax exemption due to damage caused by the Great East Japan Earthquake

*2 The areas of Miyagi prefecture are not corrected for the housing land areas subject to tax exemption due to damage caused by the Great East Japan Earthquake

period from 2010, before the earthquake, to 2014, after the earthquake, farmland, etc. decreased while roads and housing land increased, partly due to the progress of reconstruction work after the earthquake.

Section 2 Influence of the Great East Japan Earthquake on the Real Estate Market and Land Use

(Trends in land prices in the disaster areas)

Trends in land prices in Iwate, Miyagi and Fukushima prefectures

Looking at trends in land prices in each of the most afflicted prefectures (Iwate, Miyagi and Fukushima) based on the 2016 Publication, residential land prices in Iwate prefecture continued to decline slightly, by 0.4% (-0.4% in the 2015 Publication), and the rate of decline contracted for commercial land prices to 1.7% (-2.2% in the 2015 Publication). In Miyagi prefecture, the rate of price increase contracted for residential land to 1.9% (+2.3% in 2015 Publication) while the rate of increase expanded to 3.2% (2.3% in the 2015 Publication) for commercial land. The Price rise continued both for residential and commercial land in Fukushima prefecture: 2.9% increase (2.9% in the 2015 Publication) for residential land and 0.9% increase (0.8% in the 2014 Publication) for commercial land.

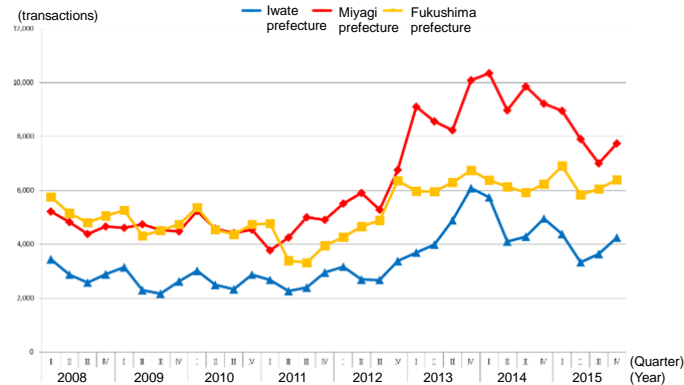
	Residential land					Commercial land				
		Fluctuation rate (%)	Increase	Flat	Decrease		Fluctuation rate (%)	Increase	Flat	Decrease
Iwate prefecture	2016 Publication	- 0.4	31 sites (24.8%)	32 sites (25.6%)	62 sites (49.6%)	2016 Publication	- 1.7	3 sites (5.8%)	21 sites (40.4%)	28 sites (53.8%)
	2015 Publication	- 0.4	22 sites (17.6%)	38 sites (30.4%)	65 sites (52.0%)	2015 Publication	- 2.2	3 sites (5.7%)	19 sites (35.8%)	31 sites (58.5%)
	2014 Publication	- 0.9	22 sites (17.7%)	18 sites (14.5%)	84 sites (67.8%)	2014 Publication	- 3.5	4 sites (7.5%)	4 sites (7.5%)	45 sites (85.0%)
Miyagi prefecture	2016 Publication	1.9	286 sites (73.9%)	46 sites (11.9%)	55 sites (14.2%)	2016 Publication	3.2	88 sites (65.2%)	19 sites (14.1%)	28 sites (20.7%)
	2015 Publication	2.3	306 sites (79.1%)	35 sites (9.0%)	46 sites (11.9%)	2015 Publication	2.3	89 sites (65.4%)	24 sites (17.7%)	23 sites (16.9%)
	2014 Publication	2.5	303 sites (77.9%)	36 sites (9.2%)	50 sites (12.9%)	2014 Publication	1.7	83 sites (62.4%)	26 sites (19.6%)	24 sites (18.0%)
Fukushima prefecture	2016 Publication	2.9	198 sites (68.8%)	47 sites (16.3%)	43 sites (14.9%)	2016 Publication	0.8	53 sites (58.9%)	14 sites (15.5%)	23 sites (25.6%)
	2015 Publication	2.9	189 sites (66.1%)	50 sites (17.5%)	47 sites (16.4%)	2015 Publication	0.8	47 sites (52.2%)	19 sites (21.1%)	24 sites (26.7%)
	2014 Publication	1.2	146 sites (51.4%)	39 sites (13.7%)	99 sites (34.9%)	2014 Publication	- 0.5	28 sites (31.5%)	17 sites (19.1%)	44 sites (49.4%)

Source: "Publication of value of standard sites" Ministry of Land, Infrastructure, Transport and Tourism

(Trends in land transactions in the disaster areas)

Looking at the number of land transactions in the three afflicted prefectures, though the number dropped just after the earthquake in March 2011, after January 2013 the figure greatly increased from the level before the earthquake in all three prefectures along with the progress of the reconstruction.

Chart: Changes in the number of land transactions through purchases in Iwate, Miyagi and Fukushima prefectures (monthly)



Source: Created based on "Statistics on Registration" Ministry of Justice
 Note: I is the January-March quarter; II is the April-June quarter; III is the July-September quarter; IV is the October-December quarter

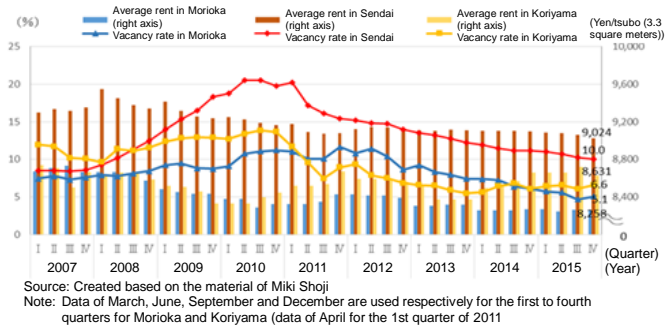
By prefecture, the number of land transactions was 5,900-6,900 per quarter in Fukushima prefecture, while the number slightly decreased since the January-March quarter of 2015 in Iwate prefecture and since the October-December quarter of 2014 in Miyagi Prefecture.

(Trends in the office market, etc. in the disaster areas)

Looking at trends in the office market in Sendai, Morioka and Koriyama, the vacancy rate in Sendai was as high as around 20% just before the earthquake due to a large supply of new office buildings during the period from 2008 to 2010. However, the rate has continued

to drop against a background of demand for offices among reconstruction-related companies, for example, to 10.0% in the October-December quarter of 2015. The rents that previously displayed a downward tendency have remained flat after the earthquake disaster. The vacancy rates in the cities of Morioka and Koriyama were also on a declining trend partly due to reconstruction-related demand after the earthquake. The rents in Koriyama have been on an upward trend since 2014.

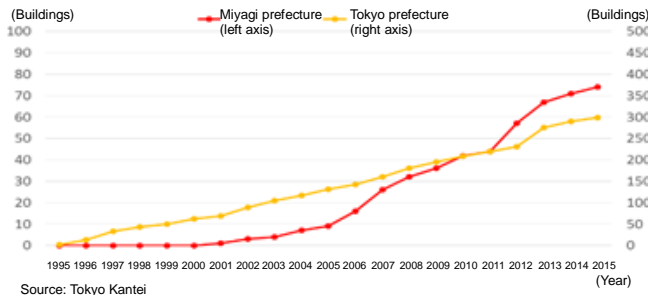
Chart: Changes in the Office rent and vacancy rate in Morioka, Sendai and Koriyama



(Trends in supply of base isolation/seismic control condominiums in Miyagi prefecture)

The supply of base isolation/seismic control condominiums is on the increase in Miyagi prefecture since 2006. The growth rate of supply has been high, especially since 2012, after the Great East Japan Earthquake, even compared with Tokyo, where base isolation/seismic control high-rise condominiums are actively supplied.

Chart: Supply of base isolation/seismic control condominiums in Miyagi prefecture (cumulative total)



Section 3 Changes in People’s Attitudes to Real Estate after the Great East Japan Earthquake

The section above surveyed the state of the housing and office markets in the disaster areas, but tremors of the earthquake and tsunami caused damage to a large number of houses in a wider

area beyond the three afflicted prefectures. The damage is thought to have influenced people's attitudes to home selection all over the country.

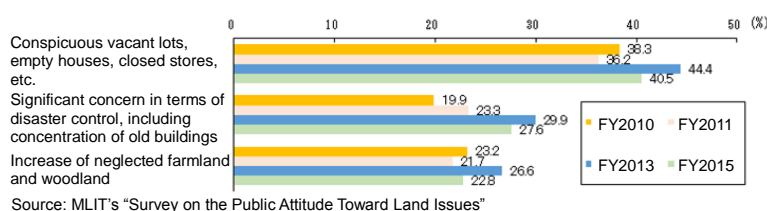
The part below looks at the changes in people's attitudes to real estate related to earthquake disaster based on the results of the "Survey on Public Attitudes Toward Land Issues."

(Familiar land problems)

According to the "2015 Survey on Public Attitudes Toward Land Issues" conducted for 3,000 people across Japan, the percentage of respondents choosing

"Significant concern in terms of disaster control, including concentration of old buildings" as most familiar land problem increased after the earthquake in 2011, and was second to "conspicuous vacant lots, empty houses, closed stores, etc." The result reflects the increasing public awareness of disaster prevention.

Chart: Familiar land problems

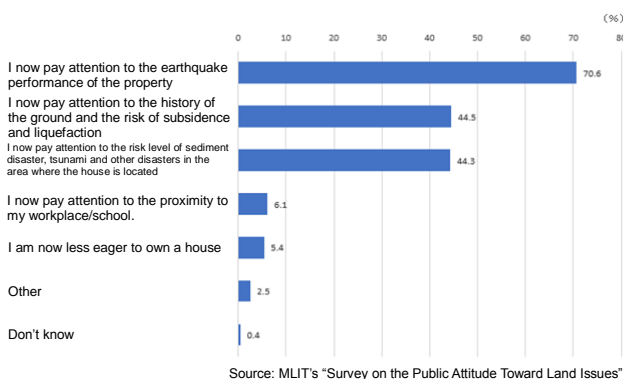


(Changes in the orientation concerning housing due to the earthquake)

To the question, "Is there any change in your home selection criteria after the Great East Japan Earthquake?" 29.9% of the respondents answered "Yes" while 49.2% of the 30-39 year old respondents answered "Yes."

Of the respondents who answered "Yes" to the question, 70.6% chose as a specific change "I now pay attention to the earthquake performance of the property," followed by "I now pay attention to the history of the ground and the risk of subsidence and liquefaction" (44.5%), and "I now pay attention to the risk level of sediment disaster, tsunami and other disasters in the area where the house is located" (44.3%).

Chart: Change in the home selection criteria after the Great East Japan Earthquake



Section 4 Changes in Land Use Triggered by the Earthquake Disaster

In the districts that suffered immense tsunami damage from the earthquake, industrial recovery

is steadily advancing, including the rebuilding of homes, post-earthquake town reconstruction and recovery, and new construction of factories and offices, based on the damage situation, topographical conditions, and opinions of the local government and residents and other factors. These projects are carried out in cooperation among various entities, including local governments, residents and private companies.

This section takes up examples characterized by their land use among specific efforts for reconstruction of areas damaged by tsunami¹.

1. Promotion of land use in collaboration with local residents and others

First, let us introduce examples of speedy efforts for post-earthquake town reconstruction where residents and private companies actively cooperate with local governments in accordance with the local characteristics.

Land use for disaster recovery public housing in private-public partnership

● Kaminakashima disaster recovery public housing in Kamaishi city, Iwate prefecture

The city of Kamaishi suffered damage, with 888 dead, 152 missing, and 3,655 collapsed houses (as of February 28, 2013). This district is located in the city's inland part, which was not damaged by the tsunami. This is an urban residential area that is very convenient, with supermarkets and elementary schools.

The project adopted a scheme based on the purchase of private facilities by the city as a form of private-public partnership, where the city purchases a building constructed by a private company. The disaster recovery public housing was developed in a short period of time and at a lower cost by having a private company conduct the entire construction process from planning and design to construction management. The planning was improved and construction costs were reduced taking advantage of private sector knowhow, while at the same time reducing the administrative burden on the city troubled by labor shortage due to the earthquake disaster.

The project used a private company's land for construction of the housing. The land was sold to the city upon the completion of the buildings. Similar methods were adopted for 30 disaster recovery public housing development projects in the three afflicted prefectures (as of the end of fiscal 2015).

Consideration is given to the community by providing a courtyard and assembly facilities for residents so as to build a new community and also for use by the wider community.

¹ Figures concerning the damage situation caused by the Great East Japan Earthquake in the cases are the latest figures known to the respective municipality as of the end March 2016.

Chart: Aerial photo of the project area



Source: Created based on materials of Kamaishi City
Note: The map is from Digital Globe of Google

Chart: Disaster recovery public housing with consideration to the community



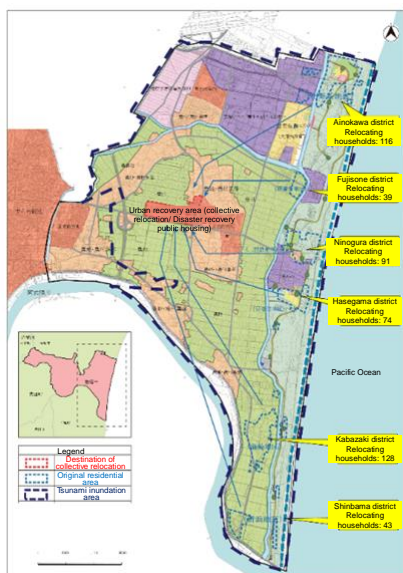
Source: Material of NIPPON STEEL KOWA REAL ESTATE CO., LTD.)

Cultivating a community through active efforts of self-governing associations

• Project to promote collective relocation for disaster prevention in Tamaura-nishi district, Iwanuma city, Miyagi prefecture

Located 18km south of the center of Sendai, Iwanuma is within commuting distance of Sendai. The Great East Japan Earthquake caused inundation in about 2,900ha or about 48% of the city area, killed 181 people and damaged 5,428 houses (736 completely destroyed and 509 almost destroyed houses). The project to promote collective relocation for disaster prevention in Tamaura-nishi district, in the eastern part of the city, completed the development of a housing complex earliest among such projects of the same scale (area of relocation destination is 20ha with 300 lots (including 111 lots for public housing)). Self-governing associations have long been active in this district and are playing active roles in post-earthquake town reconstruction. This is why the project to promote collective relocation was implemented by setting the target of creating a compact and sustainable town while maintaining the existing communities and concentrating the associations that had been distributed along the coast in the housing complex developed in an inland area.

Chart: Project to promote collective relocation for disaster prevention in Tamaura-nishi district



Source: Created based on materials of Iwanuma city

Chart: View of Tamaura-nishi district



Source: Materials of Iwanuma city

2. Efforts to promote land use based on vulnerability to disaster

Learning from the tsunami disaster caused by the Great East Japan Earthquake, there are efforts to promote various land uses based on the vulnerability to disaster, especially along the coasts. Here we introduce characteristic cases of promotion of land use based on the vulnerability to disaster.

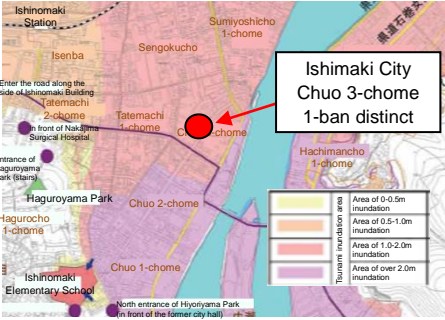
Development of artificial ground and houses to cope with disaster as an urban redevelopment project

• Chuo 3-1 District Class I Urban Redevelopment Project in Ishinomaki, Miyagi prefecture

The city of Ishinomaki suffered damage, with 3,178 dead, 422 missing (as of January 2016), and 56,701 damaged houses (as of the end of January 2016). This district is located eight minutes by foot from JR Ishinomaki Station, at the center of the city damaged by the tsunami on the right bank of the Kitakami River. This is a very convenient urban district formed around stores and office buildings. Because the district is within the flood area of the tsunami, the project constructed a complex consisting of commercial facilities and drive-in parking facilities on 1st and 2nd floors, an artificial ground over them about 6m above the ground and 77 dwelling units on the 3rd to 6th floors on the artificial ground.

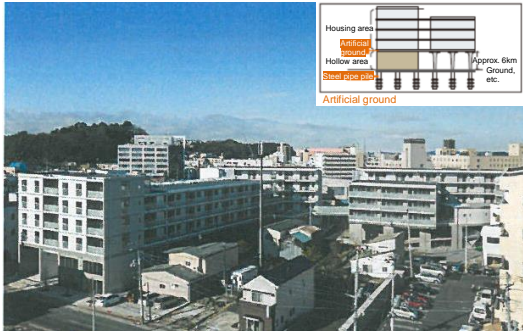
The complex can serve as a temporary evacuation facility in the event of a tsunami or other disaster. The commercial facilities include a local convenience store, cafes, a tutoring school and other businesses to attract visitors to the shopping street and improve pedestrian flow. These features combined with the promotion of living in the city center through housing supply to disaster victims contribute to the vitalization of the inner city and realization of a compact city.

Chart: Tsunami inundation area and the redevelopment project area



Source: Created based on materials of Ishinomaki city

Chart: Condominium on an artificial ground to cope with disaster



Source: Created based on materials of Ishinomaki city

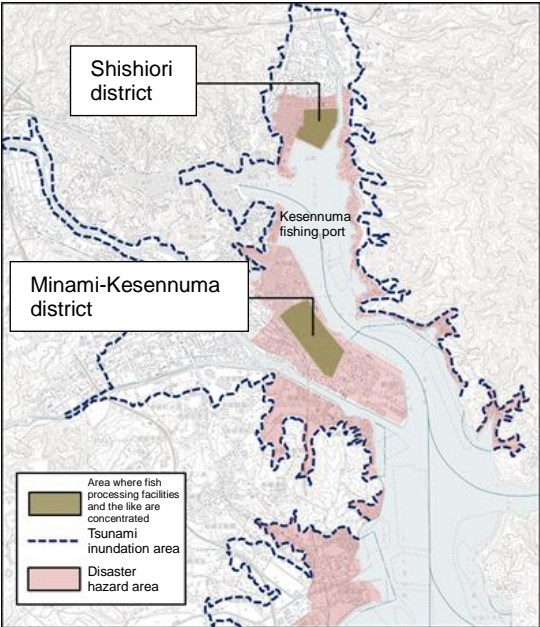
Efficiency improvement and recovery of key industries by consolidating land for fish processing facilities, etc. and accumulating factories/offices

• Shishiori and Minami-Kesenuma districts of Kesenuma city, Miyagi Prefecture

The city of Kesenuma suffered damage, with 1,150 dead (including disaster-related deaths), 220 missing (as of February 29, 2016), and 20,650 destroyed or half-destroyed houses (as of March 2014). The earthquake caused catastrophic damage to fisheries and seafood processing industries, which are key industries of the city. They have recovered to about 60% of the level before the disaster.

Before the disaster, Minami-Kesennuma and Shishiori districts were so crowded with houses and factories that fisheries businesses could not expand their facilities to the adjacent area, resulting in factories scattered in multiple places and inefficient land use. To address this issue, the city promoted appropriate land use as a fisheries infrastructure project, under which the city purchased land in a fishing port area that the city had ordered to expand from land owners, consolidated, developed and sold the land in lots. As a result, businesses could ensure an appropriate scale of operation leading to the recovery of afflicted key industries, efficiency improvement through factory consolidation and productivity improvement.

Chart: Location of Shishiori and Minami-Kesennuma districts



Source: Created based on materials of Kesennuma city

Chart: Consolidation of fish processing facilities, etc. and accumulation of factories/offices in Shishiori district



March 2011



March 2016

Source: Material of Kesennuma city

Efforts to create an industry in a disaster hazard area toward an Eco-Future City
- Changing housing land in a disaster hazard area to farmland and land for other use —

● **Hope of Lawn Grass Project in Ushiami, Higashi-Matsushima city, Miyagi prefecture:**

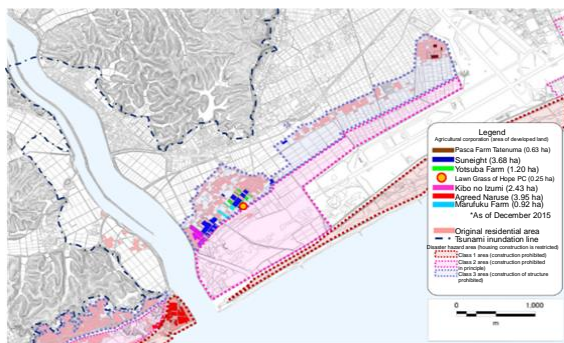
Higashi-Matsushima city suffered damage, with 1,110 dead, 24 missing (as of January 13, 2016), and 14,580 damaged houses (as of September 2014). The district where farmland mostly consisting of rice paddies spread is adjacent to an existing residential area.

Because the district is located in the tsunami inundation area, efforts are made to change the land use according to the vulnerability to disaster by establishing tsunami disaster prevention areas (disaster hazard areas) to promote collective relocation for disaster prevention while limiting housing construction and promoting land use for farming in the areas.

Specifically, city land available for use of a certain scale is leased to six local agricultural corporations (10-year contract).

As of December 2015, 16.85ha has been developed as farmland. Under this project, lawn grass that is very resistant to salt damage is grown on trial using small plots that are difficult to use in a tsunami disaster prevention area. Trial grass cultivation in about 0.25ha started through entrustment to local residents in April 2015. The grass will be purchased by a private company and shipped to various places in Tohoku around fall of 2016.

Chart: Tsunami inundation areas and the project area



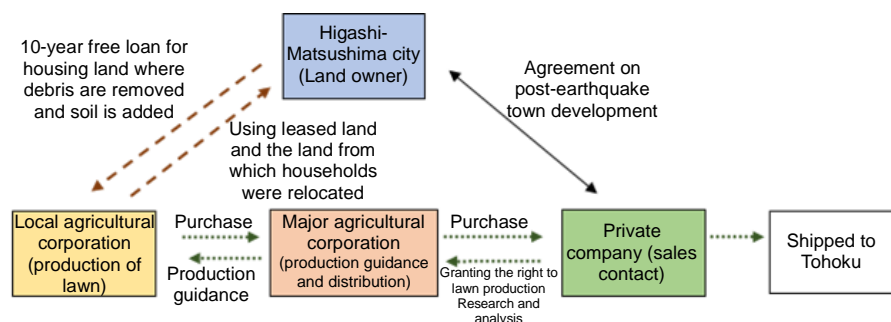
Source: Created based on materials of Higashi-Matsuyama city

Chart: A scene of planting



Source: Materials of Higashi-Matsuyama city

Chart: Structure of cooperation in the project



Source: Created based on materials of Higashi-Matsuyama city

Land use for photovoltaic generation in private-public partnership in coastal areas

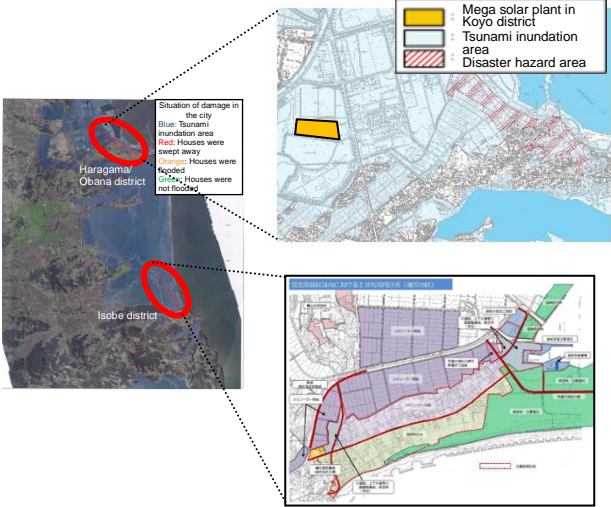
• Koyo and Isobe districts, Soma city, Fukushima prefecture

The city of Soma suffered damage, with 458 dead and 1,097 completely destroyed houses (as of the end March 2013). As a result of the damage by the tsunami caused by the earthquake, about 110ha of the city area is designated as a disaster hazard area where construction of residences is restricted.

For effective utilization of the disaster hazard area and other land, and the creation of sustainable society, the city is considering the use of renewable energy including photovoltaic power generation in public-private partnership. As a model project, the city has developed a mega solar power plant in Koyo district, which is within the Industrial Park Higashi District, and experienced tsunami inundation at the time of the earthquake disaster. The city selected the executing business based on proposals from private businesses and leased city land to the selected business, which then developed a mega solar power plant with a generating capacity of about 2MW.

The city is developing another mega solar power plant with a generating capacity of about 52MW using city land in Isobe district, also within the disaster hazard area.

Chart: Locations of Koyo and Isobe districts



Source: Created based on materials of Soma city

Chart: Mega solar plant in Koyo district (Soma Koyo Power Plant)



Source: Material of Higashi-Matsuyama city

Chapter 3 Effective Utilization of Existing Stock in Response to Societal Change and Diversification of Real Estate Information

Social conditions surrounding real estate are greatly changing as exemplified by the increasing number of empty houses, rising consumer awareness of home selection against the background of intensifying disasters, and the progress of IT utilization in the industrial world. This Chapter introduces responses to these social changes in the field of real estate, while surveying the changes. Specifically, the Chapter introduces trends in efforts concerning “Response to Society that Values Existing Stock” and “Response to Society Where Diverse Real Estate Information is Distributed.” It also introduces the trend of “Computerization of Real Estate Information Using Advanced Technology (Real Estate Tech),” which is a characteristic trend over the past few years.

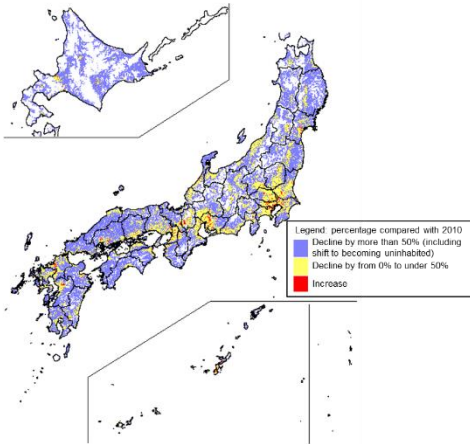
Section 1 Response to Society that Values Existing Stock

1. Effective utilization of underutilized/unutilized real estate (Demographics of Japan)

The population of Japan turned to decline in 2010 and is expected to decrease by about 15.50 million in 20 years from 127.76 million in 2015 to 112.12 million by 2035. The number of households is also projected to begin to decline in 2020.

Looking at demographics divided into about 1-square kilometer units, the population of many units is expected to decline to less than half of the population of 2010 by 2050. By municipality, the smaller the population of a municipality in 2010, the higher its expected rate of population decline by 2050.

Chart: Population changes in 2050 compared with 2010



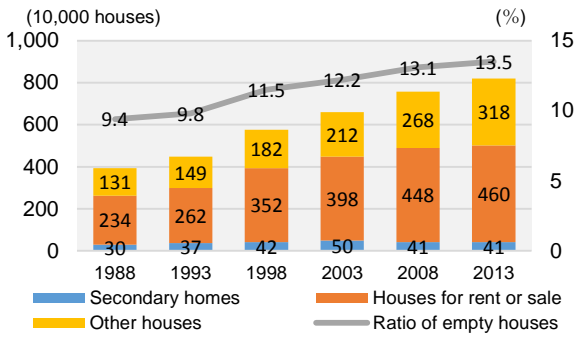
Source: Created based on “Population Census” of the Ministry of Internal Affairs and Communications and values estimated by MLIT
Note: does not include all territories of Japan

(Situation and public perception of empty houses, etc.)

The total number of vacant houses reached 8.20 million in 2013, increasing 1.2-fold from the 2003 level and 1.8-fold from the 1993 level. In breakdown by type, the most common empty houses are “houses for rent or sale” (4.60 million) but “other houses” (3.18 million) increased 1.5-fold from the 2003 level and 2.1-fold from the 1993 level.

The increase in empty houses and vacant lots is showing an influence on public attitudes. According to the result of MLIT’s “Survey on Public Attitudes Toward Land Issues,” the highest percentage of the respondents chose “Conspicuous vacant lots, empty houses, closed stores, etc.” as a familiar land problem in recent years (See the chart of p9, Part 1, Chapter 2.)

Chart: Changes in the number of empty houses by type



Source: The Housing and Land Survey, MIC

Advanced Efforts for Effective

Utilization of Underutilized/unused Real Estate

- **Vacant home/land management service (NPO Vacant Home and Land Management Center)**

Incorporated Nonprofit Organization Vacant Home and Land Management Center provides its service in 65 municipalities of 11 prefectures as of April 1, 2016. The center offers the “100 yen management service” for owners who are passive about management and the “solid management service” for owners who are active about management. The 100-yen service includes a regular monthly patrol, visual check for problems around the front door and a report of the results. The solid management service includes, in addition to the patrol report, ventilation of the house, leak check, turning on taps and disposal of yard waste.

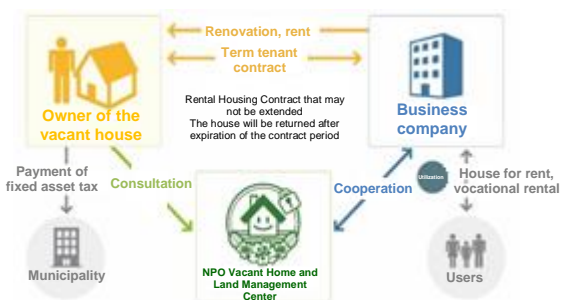
The center puts efforts also into consultation for owners and proposals for use of vacant houses. In addition to proposals and good offices for selling vacant houses/land as is to the owner of the adjacent land below the market price so that the owner can expand their living space, the center also offers AKARI program, whereby a business company leases a vacant house based on a fixed-term rental housing contract with rent equal to the total amount of the fixed asset and city planning taxes of the property for three to seven years, renovates the house at its own expense and uses it as a house for rent.

Chart: Managerial agency service



Source: NPO Vacant Home and Land Management Center

Chart: Structure of AKARI, vacant house lease system



Source: NPO Vacant Home and Land Management Center

This program provides business companies with an advantage to rent houses at rents under the market value. Owners of empty houses can, though making low profit, (1) postpone the decision on the empty house, (2) save the trouble of management for a certain period, (3) pay fixed asset tax with the house rent income, and (4) use the renovated house after termination of the fixed-term rental housing contract.

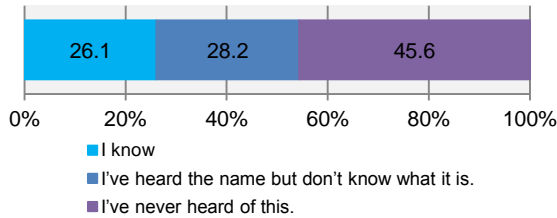
- **Partnership agreement for utilization of empty houses signed by a local government and an association of residential land building business (Yamanashi city)**

An increasing number of local governments are setting up a “vacant house bank” that provides information on vacant houses to city residents who seek a country life and other people, and match owners of vacant house with prospective tenants. Public awareness is also rising. However, there is a limit to the development of a project by a local government alone because smooth operation of a vacant house bank requires detailed response including accurate advice by a counselor with expertise on real-estate transactions.

For this purpose, Yamanashi city, Yamanashi prefecture, and Yamanashi Association of Residential Land Building Business signed a partnership agreement on mediation by a vacant house bank, under which the association mediates contract negotiation between owners and prospective tenants. The program also provides prospective tenants with advice from a technical perspective during property observation and displays the property condition with five stars in addition to the price, area, structure and other basic information.

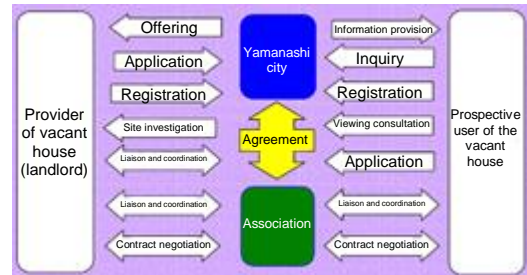
This way, the system where real estate brokers mediate between the owners of a property registered with the vacant house bank and prospective tenants prevents trouble and creates an environment for transactions with a sense of security.

Chart: Visibility of vacant house/land banks



Source : MLIT's "2015 Survey on the Public Attitude Toward Land Issues,"

Chart: Management structure of the vacant house bank in Yamanashi city



Source: Yamanashi city

• Inviting enterprises by utilizing vacant public facilities (Minami-boso city)

Minami-boso city, Chiba prefecture, has been making progress in attracting enterprises by utilizing vacant public facilities since 2012. Specifically, the city implements three-year free rental of public facilities that have become vacant as a result of municipal merger and population decline, and has developed an optical fiber network available across the city, and set up a vacant house bank system and other housing support systems in order to attract IT, venture and other companies. The aim is to create jobs in the city, increase tax revenue, expand the number of visitors and control population decrease while keeping the initial costs of the companies low. As a result, an IT company creating websites and developing applications, an agricultural production corporation growing strawberries for sweets and producing and selling sweets, and other companies started business in the city. As of April 1, 2016, these companies have started to use 11 of the 14 vacant public facilities in the city.

Chart: An example of utilization of vacant public facilities
Farmers' market operated by an agricultural production corporation



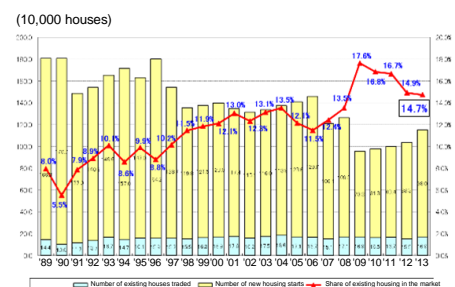
Source: Material of Minami-Boso city

Chiba prefecture is also paying attention to the city's efforts and started attracting enterprises in fiscal 2016 using vacant public facilities in partnership with municipalities, financial institutions and other partners in the prefecture and taking advantage of the grant for acceleration of regional revitalization. The prefecture and municipalities will work together to use vacant public facilities, which are expected to increase, for job creation.

1. Vitalization of existing home market

In order to prevent the generation of empty

Chart: Share of existing home sale



Source: MIC "The Housing and Land Survey" MLIT "Statistical Survey of Construction Starts

houses/vacant land, it may be effective to promote vitalization of the existing house market, taking advantage of the already abundant housing stock.

(Present state of the existing house market)

In Japan, about 170,000 existing homes are sold annually. The share of existing home sales to all home sales is about 14.7%. The figure is as low as about one sixth of the level in Europe and the United States. To address this situation, the government takes various measures for vitalization of the existing home market.

(Improvement of the building evaluation rule for existing houses)

Generally, the market value of an existing house is considered to become zero 20 to 25 years after its construction, regardless of its condition. For this reason, the performance and maintenance conditions of houses are not properly reflected in the price, which has a negative impact on relocation and maintenance of houses by the owners.

To address this issue, in “the guidelines for improvement of building evaluation pertaining to used detached houses” established in March 2014, the government called for proper reflection of the performance, renovation status and other conditions of houses on their building evaluation. In order to spread and establish the approach of the guidelines among real estate brokers, the government revised “the appraisal manual” used for assessment by real estate brokers in July 2015 and is promoting the use of the revised manual in their business. In the same month, the government compiled points of attention for real estate appraisers for appraisal of existing detached houses.

(Eliminating anxiety about the quality of existing houses)

Prospective purchasers generally have concerns about the quality of existing houses. Therefore, it is necessary to create an environment that enables purchasers to ascertain the safety, deterioration and other conditions, and develop a safety net for a case where a defect is discovered after the transaction.

In order to address these issues, the government has

Chart: Improvement of the building evaluation rule for existing houses

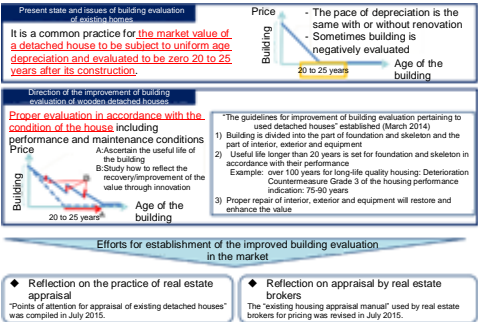


Chart: examples of inspection

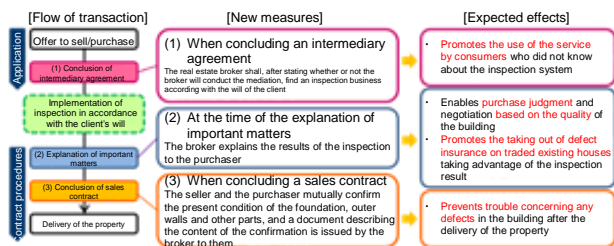


Left: measuring tilting of a post with a level
 Right: measuring crack width of a foundation with a crack scale

developed a system concerning existing home defect insurance and promoting inspections using “existing house inspection guidelines” and other means. The inspection is conducted by persons with expert knowledge. They check for cracks, leaks and other deterioration events and troubles in each part, including the foundation and outer walls, by sight, measurement and other methods. The safety of the foundation, walls, posts and other parts in terms of their structural resistance, and leaks and other deterioration events in the roof, outer wall, openings and other parts are also inspected.

According to a questionnaire survey by the Association of Housing Warranty Insurers, however, only 15.3% of people who have sold an existing home and 7.2% of people who have bought one actually used the inspection.

In light of this situation, the bill to revise a part of the Real Estate Brokerage Act that was decided by the Cabinet and submitted to the Diet in February 2016 provided that necessary measures shall be taken so that real estate brokers will encourage the use of the inspection by experts before the transaction of an existing home with the aim of creating a market environment where people can buy existing houses free from anxiety. Specifically, (1) when signing an intermediary agreement, the real estate broker shall, after showing whether or not the broker will undertake the mediation, find an inspection business according to the will of the prospective purchaser of an existing home, (2) the broker explains the results of the inspection to the purchaser when explaining important matters, and (3) the seller and the purchaser mutually confirm the present condition of the foundation, outer walls and other parts when concluding a sales contract, and a document describing the content of the confirmation is issued by the broker to the seller and the purchaser.

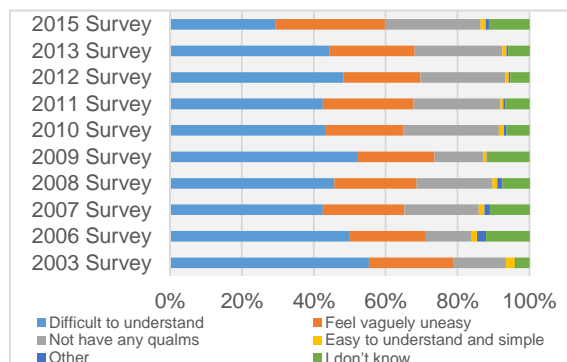


Section 2 Response to Society Where Diverse Information is Distributed

This section introduces trends in efforts for diversification of real estate information made by the national and local governments and others, while summarizing the changes in the evaluation of the real estate market and attitudes to home selection by consumers and investors.

1. Evaluation of the transparency of

Chart: Impression of real estate transactions



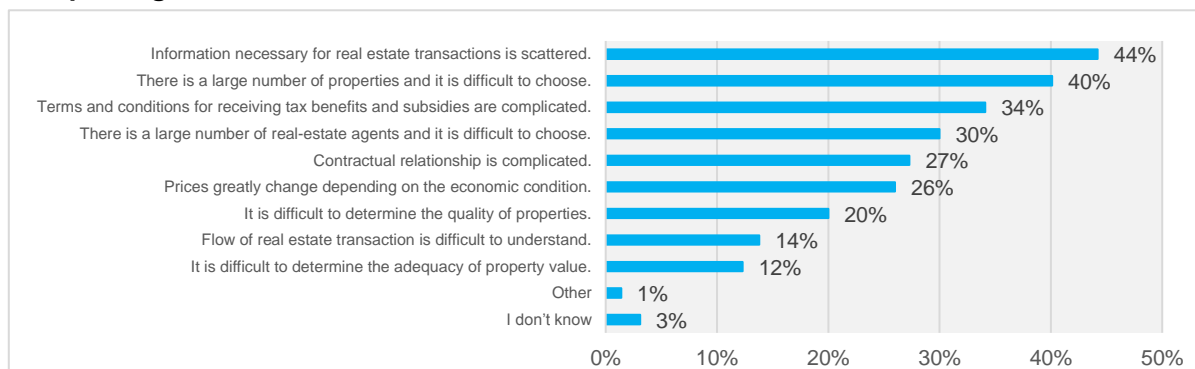
Source: the “Survey on the Public Attitude Toward Land Issues,” MLIT

Japan's real estate market

Looking at the results of the “Survey on Public Attitudes Toward Land Issues,” the respondents answering “difficult to understand” or “vaguely uneasy” to the question about the impression of real estate transactions account for 60% of all respondents, though the percentage has been slightly decreasing since 2003. The top reason is “it is difficult to determine the adequacy of property value” followed by “flow of real estate transaction is hard to understand” and “it is difficult to determine the quality of property.”

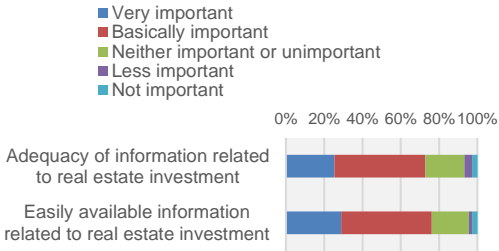
As concerns evaluation by domestic investors, according to a questionnaire survey asking for the importance and present state of factors for investment judgment in comparison with the domestic financial instruments market and overseas real estate markets, both “the adequacy of information related to real estate” and “the accessibility of information related to real estate” are found important by about 70% of the respondents, but 35 to 40% of respondents answered that the adequacy and accessibility were insufficient.

Chart: Reasons why the respondents feel real estate transaction is “difficult” or “disquieting.”



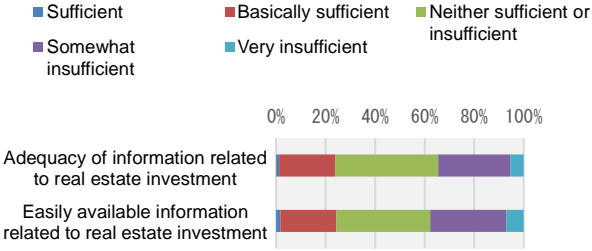
Source: MLIT “Survey on Public Attitudes Toward Land Issues”

Chart: Importance of factors for investment judgment in comparison with the domestic financial instruments market and overseas real estate markets



Source: Questionnaire survey for domestic investors, MLIT

Chart: Perception/evaluation of the present state of factors for investment judgment in comparison with the domestic financial instruments market and overseas real estate markets



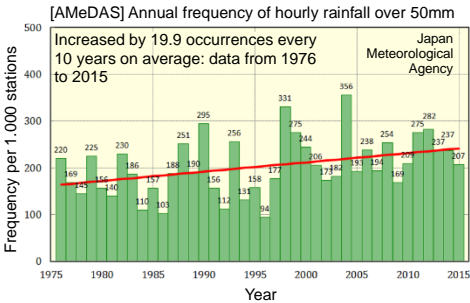
Source: Questionnaire survey for domestic investors, MLIT

1. Rising consumers’ awareness of home selection based on disaster risk assessment

In recent years, the frequency of hourly rainfall over 50mm is increasing, causing local and intensive disasters that are difficult to predict. In August 2014, an extensive sediment disaster occurred in Hiroshima city, Hiroshima prefecture. In September 2015, Joso city of Ibaraki prefecture experienced flooding of the Kinu River. There is a concern of further intensification of storm and flood damage caused by heavier rain due to climate change. There is also concern about a Nankai Trough earthquake.

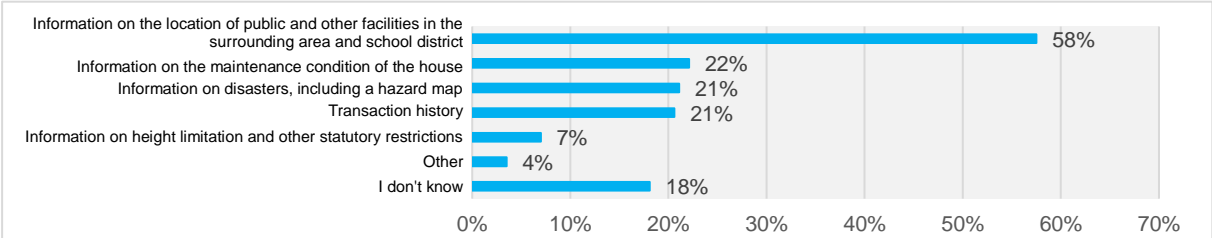
Partly due to these concerns, about 20% of respondents answered “information regarding disaster such as Hazard Map” as the information they had considered when purchasing property. This indicates the rising interest in disaster information for home selection.

Chart: Annual frequency of hourly rainfall over 50mm (per 1000 AMeDAS stations)



Source: Japan Meteorological Agency

Chart: Information other than property price that was considered for real estate transaction



Source: MLIT “Survey on Public Attitudes Toward Land Issues”

2. Efforts concerning diversification of real estate information

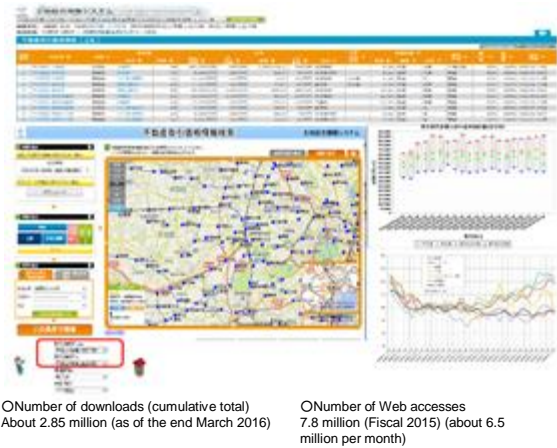
(1) Provision of real estate transaction information and Property Price Indices

In addition to the low frequency of trade, real estate is an asset with strong individuality. Furthermore, property prices are strongly influenced by economic and transaction conditions. This is why it is important to enhance information regarding property prices.

For this purpose, since April 2006 the government has been publishing information on actual transaction prices based on questionnaire surveys for parties to the transactions based on registration information every quarter through the Land General Information System after concealing individual information. In this way, the government provides a broad range of information on real estate transaction prices that is difficult for general consumers and investors to access. In April 2016, it was made possible to collectively download real estate transaction price information of multiple years from the system (see the part within the red frame in the Chart), and information provision through the Application Programming Interface (API) started to enhance the utility value of the service and convenience for users.

Since April 2012, the government has been publishing Property Price Indices (residential properties) based on real estate transaction price information and in line with Eurostat and other guidelines formulated by international organizations. In addition, trial operation of Property Price Indices for commercial properties started in March 2016. Property Price Indices for commercial properties indicate the trends of property prices of seven categories—stores, offices, warehouses, factories,

Chart: Providing real estate transaction information and Property Price Indices



condominiums/apartments (single buildings), commercial land and industrial land—of the whole country, by metropolitan area (three areas), and by prefecture (Tokyo, Osaka and Aichi). The PPI of the whole country and by metropolitan area are published every quarter, while PPI by prefecture is published every year. This makes it possible to precisely ascertain trends in property prices in a timely manner.

(2) Provision of disaster risk information

In order to promote the selection of properties based on the understanding of the disaster risk of each parcel of land when purchasing a property, it is necessary for local governments and other parties to collect and organize information on the disaster risk of individual parcels of land and communicate the obtained information correctly and clearly using various methods.

Advanced efforts toward diversification of real estate information

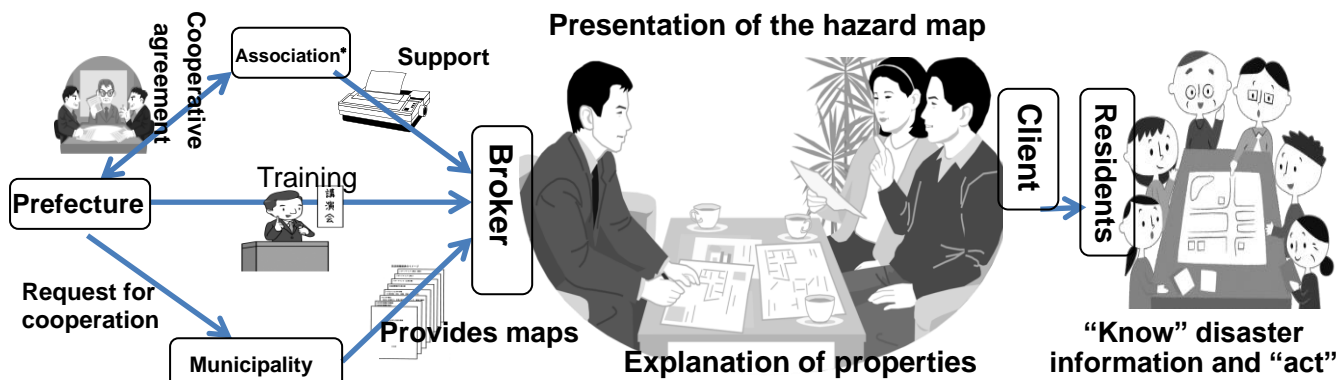
● Dissemination of disaster prevention information at the opportunity of real estate transaction

In August 20, 2014, heavy rain continuing from the previous day caused an extensive sediment disaster in Asa-Kita and Asa-Minami districts of Hiroshima city, Hiroshima prefecture, resulting in 76 deaths (including two disaster-related deaths). In response, Hiroshima prefecture enacted an ordinance setting a new goal of zero disaster deaths in March 2015 and started a campaign to reduce disaster by efforts of all residents of Hiroshima in April.

As part of the efforts, in March 2015 the prefecture and associations* signed a cooperative agreement on dissemination of disaster prevention information at the opportunity of real estate transaction. In concrete terms, hazard maps were distributed to real estate brokerage offices in the prefecture. The brokers are expected to explain the location of properties by presenting the hazard map and other information to their clients. In order to support the process, the prefecture and the associations hold training sessions for brokers, while municipalities provide hazard maps and other materials.

Dissemination of disaster risk information including hazard maps at the time of a real estate transaction is expected to have effects such as faster evacuation at the time of a disaster. There is also a benefit to real estate brokers to earn the trust of clients by providing hazard map and other information.

Chart: Flow of provision of information on hazard map, etc.



*Associations: Hiroshima Prefecture Association of Residential Land Building Business and All Japan Real Estate Federation Hiroshima

Source: Hiroshima Prefecture’s material

(3) Collection and provision of information concerning real estate transaction

Information on properties and the surrounding area necessary for real estate transaction (hazard map and other information regarding natural disaster risk, information on statutory restrictions such as city planning, information on transactions in the surrounding area) are scattered among various organizations and media, which poses a challenge to promptly providing a broad range of information to consumers.

To address this situation, the introduction of a system to collect and provide information necessary for real estate information (“Integrated Real Estate Database”) as a market infrastructure is expected to improve the transparency of the market and spread and establish a broad range of timely and correct information provision and consulting services for consumers by real estate brokers.

For this purpose, the government has been conducting a study for the construction of Integrated Real Estate Database since fiscal 2013. In June 2015, the government started trial operation of a prototype system for properties in Yokohama in June, while surveying the data management status of administrative information held by local governments in an effort to grasp the effects expected from the

Chart: A screen of the Integrated Real Estate Database

The screenshot shows the main screen of the Integrated Real Estate Database. Callouts describe various features:

- Display of map information:** The property is displayed in the center of the map. Statutory restrictions, hazard map, infrastructure, surrounding facilities and aerial photo are displayed on the map. You can change the display by selecting the information you want.
- Use district, etc.**
- Sediment disaster alert area**
- Aerial photo**
- Main screen of the Integrated Real Estate Database:** Shows a map with a property location and a list of nearby properties.
- Display of past contract prices:** Displays past contract information of the property. You can check the details of the contract information on a separate screen.
- Detailed information of past contracts**
- Display of surrounding facilities:** Displays facilities within a 10m-radius from the property and the distance to the facilities.
- Link to external sites, etc.:** Displays information related to the property or the surrounding area in a separate window or through links to external sites.
- Display of Information on conclusion of contract in the surrounding area:** Information on the five most recent contract conclusions (REINS). You can check information on all contract conclusions and their scatter diagram on a separate screen.
- Information on conclusion of contract in the surrounding area**
- Scatter diagram**
- Display of Information on real estate transactions in the surrounding area:** Displays the information of the five latest real estate transactions in the surrounding area. You can check information of all transactions and their scatter diagram on a separate screen.
- Information on real estate transactions in the surrounding area**
- Scatter diagram**

introduction of the system and issues concerning its functions and operation. In fiscal 2016, the government plans to improve the system, and study the operating agency and rules, measures for development and enhancement of information held by local governments and the direction of information provision for consumers.

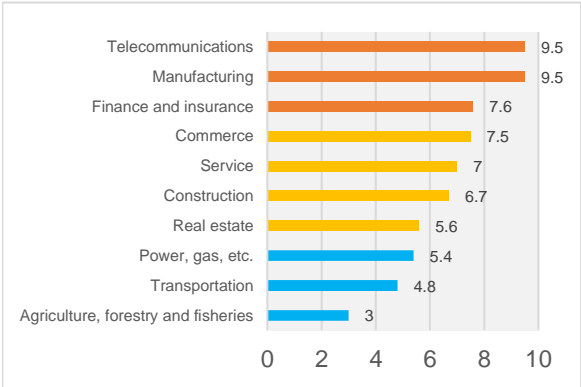
Section 3 Trend of “Computerization of Real Estate Information Using Advanced Technology (Real Estate Tech)”

In recent years, IT utilization has been rapidly spreading also in the real estate sector, where the delay of IT use has been pointed out. This section introduces the trend of IT utilization in the real estate sector.

(1) Trend of IT use related to the real estate sector of Japan

According to a survey by the Ministry of Internal Affairs and Communications, in which the state of IC use in major industries was scored based on a questionnaire survey of employees of the respective industries, the information and communication, manufacturing, and finance and insurance industries scored high, at 7.6 to 9.5, whereas the real estate industry scored relatively low at 5.6, which shows the industry’s delay in IT use.

Chart: Score on ICT use by industry



Source: MIC “Report of research and survey on challenges for acceleration of economic growth using ICT and their solutions”

(2) Trend of the computerization of real estate information (Real Estate Tech)

While there are indications of a delay in IT use in Japan’s real estate sector, the computerization of real estate information integrating real estate and advanced technologies (Real Estate Tech) is gaining momentum in these two years, following FinTech of the financial industry. Below, characteristic efforts are introduced, including utilization of a geographic information system, big data and IoT.

Characteristic initiative using geographic information system ²

² Geographic Information System (GIS) refers to technology enabling analysis of superimposed information on location and space as well as visual indication of information.

- **Visualization of ground information**

In recent years, progress has been made in efforts in the real estate sector to visually indicate information on the location and space of properties taking advantage of a geographic information system.

In May 2014, a private company conducting ground analysis started a free service for the general public, whereby they can browse and receive mapped ground risk information of many parts of Japan in order to promote “visualization” of ground information. Using this service, if you enter an address, there will be a display of 16 superimposed maps, including an old edition topographic map, aerial photo, sediment disaster danger spots, liquefaction hazard map of the local government, and results of a detached house ground analysis

Chart: Browsing screen of ground risk information



Source: Jibannet Co., Ltd.

conducted by the company. The company offers a paid service for businesses, which displays 41 superimposed maps, including an earthquake motion prediction map, school district information and results of the public announcement of land prices. The company also offers a free service for the general public to create a simple report of scores of five items—improvement work ratio, inundation risk, vulnerability to shaking due to earthquake, sediment disaster risk and liquefaction risk—of the land chosen by the requestor, by using as a reference a simple disaster risk evaluation manual³ developed for local governments by the Geographical Survey Institute.

These services enable consumers and businesses to check information on the ground before purchasing land.

Characteristic efforts using big data

- **Service to calculate reference prices of existing condominiums**

Because real estate is an asset with strong individuality, prices and other information on individual properties are not easily accessible to consumers or investors. Though the vitalization of the existing house market has been a priority issue in recent years, consumers need to ask a specialized business for assessment to know the property value of an existing house that is not for sale. Prices of existing houses are not transparent for general consumers. In recent years, however, a service to predict and estimate the prices of individual properties is spreading.

³ Technical data of the Geographical Survey Institute, “simplified disaster risk evaluation method using numeric data of land condition maps”

A real estate property information company operating a real estate portal site started a free browsing service of reference prices of existing condominiums. Specifically, the company makes trial calculations of reference prices of properties based on the sale information posted on the real-estate portal site and using pricing structure analysis based on logic developed by the company so that users can see reference prices of individual units of existing condominiums on a housing map and aerial photo.

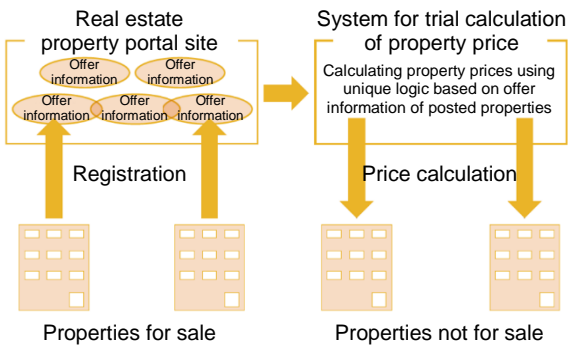
This way, the service enables users to casually check reference prices of the property under consideration and properties in the surrounding area for comparison at home without asking a business for assessment, and thereby contributes to vitalization of the existing house market.

Chart: Reference price browsing screen



Source: Next Co., Ltd.

Chart: Flow of reference price calculation



Source: Created by MLIT based on the material of Next Co., Ltd.

Characteristic efforts using IoT

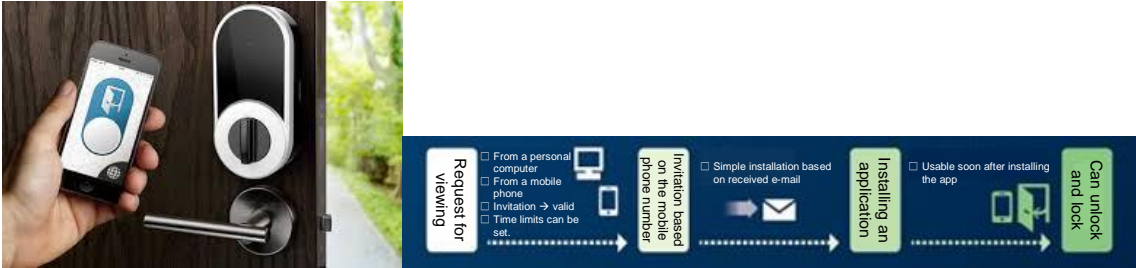
● **Sharing vacant spaces through integration of the Internet and IoT devices**

There is also a development to use IoT (Internet of Things) also in the real estate sector.

A private company manufacturing and selling Smart Lock, an IoT device for locking/unlocking the front door using a smartphone or tablet terminal, introduced “Smart Nairan,” a system for unaccompanied private viewing of rental units taking advantage of Smart Lock, which enables locking/unlocking by specified persons or during specified time zones. The system enables users who have made a reservation through the Internet to see the inside of the property freely by just bringing their smartphone or tablet. They can also make an on-the-spot application for a rental contract of the property that suits them through the Internet. Through the system, the company aims to bypass the attendance and handing over of keys by sales representatives of real estate companies, speed up the conclusion of lease contracts, make the process more convenient for consumers, and reduce the costs and risks of losing keys.

The company also operates a site to invite and introduce pay-by-the-hour vacant space in conjunction with Smart Lock on a trial basis. The site has a membership function, which enables owners to let their space only to designated people – their friends/acquaintances, residents of a specified area, or a specified community, for example. They can also let their home or office as rental space for a period when they are absent by using Smart Lock. The original purpose of the system was to improve the occupancy rate of vacant rooms and spaces for private viewing by letting them as rental space for a period not scheduled for viewing, but vacant spaces are used in various ways by using Smart Lock in combination with sites to invite people to and introduce pay-by-the-hour vacant spaces with a membership function.

Chart: Smart Lock and how it is used



Source: Linough Inc.

Part 2 Basic Measures in Relation to Land in FY2015 (Omitted)

Basic Measures in Relation to Land in FY2016 (excerpt)

Chapter 1 Dissemination of Basic Philosophy on Land

During the “Land Month” of October (October 1 is “Land Day”), the government will work to disseminate the basic philosophies on land and introduce various measures and systems concerning land in collaboration with relevant organizations.

Chapter 2 Enhancement of Information on Land

Section 1 Systematic Maintenance of Land Information

In order to systematically maintain information on land ownership, utilization, transactions, prices and so forth, the government will conduct publication of the value of standard sites and cadastral surveys, as well as grasp transaction information. It will also implement a preliminary survey of the “Corporation Survey of Land and Buildings” (fundamental statistics) scheduled in 2018.

Section 2 Promotion of National Land Survey

The government promotes cadastral surveys, land classification surveys (including a land-use history survey), and water surveys.

Section 3 Promotion of Enhancement of National Land Information

As for digital national land information, the government will revise publication of values of standard sites and publication of values of standard sites by prefectural government. Concerning geospatial information, the government will prepare and update map information and geospatial information (i.e., social foundation) based on the basic plan for advancing the use of geospatial information that was decided by the Cabinet in March 2012. The administration of land surveys will be also promoted.

Section 4 Enrichment of the Land Registration System

The government will focus on the intensive mapping of urban areas for which the lot numbers are not adequately registered and other areas requiring urgent mapping across the nation in order to provide them at registries.

Chapter 3 Accurate Understanding of Land Prices Trends

Section 1 Promotion of the Publication of Values of Standard Sites

The government will publish the results of analyses of trends in land prices based on the results of the standard sites expanded to 26,000 in 2017 Publication. It will also publish the results of analyses of the trends in land prices based on the 2016 investigation of prefectural land prices carried out by prefectural governors.

Section 2 Provision of Real Estate Transaction Prices

The government will conduct surveys on real estate transaction prices nationwide and publish the information on transaction prices obtained in the surveys on the Internet on a

quarterly basis.

Section 3 Development of Property Price Indices

The government will ensure stable operation of residential property price indices while improving commercial property price indices toward full-scale operation and analyzing utilization methods of the indices.

Section 4 Enhancement of Real Property Appraisal

The government will endeavor to disseminate the revised Real Estate Appraisal Standards (enforced on November 1, 2014) and continue appraisal monitoring, including on-site inspection concerning real property appraisal firms and investigation of operations concerning real estate appraisal, etc. for securitization.

Section 5 Balanced and Proper Land Appraisal by the Public Sector

In order to promote proper land-price formation and taxation, the government will strive for balance and reasonableness in public land appraisals relative to the prices that are used in assessing fixed property tax and inheritance tax, while making efforts to properly reflect land price trends, etc. on appraisals.

Chapter 4 Improvement of Real Estate Market

Section 1 Improvement of Real Estate Transaction Market

The government will ensure proper application of the Real Estate Brokerage Act, development and revitalization of real estate markets including the used-house transaction market, promotion of Real Estate Specified Joint Enterprises, proper application of the land transaction control systems, spread of green buildings and provision of contaminated-land information related to land transactions, for example

Section 2 Improvement of Real Estate Investment Market

In order to revitalize the real estate investment market, the government will take measures including implementation of seminars on healthcare REIT for businesses related to healthcare, dissemination of manuals for local governments on utilization of public real estate securitization methods and implementation of related model projects.

Section 3 Land Tax Measures

In view of the energization of land transactions and the promotion of land use, the government will continue to implement tax measures for the acquisition, possession and transfer of land at each step.

Section 4 Support for Global Business Development in Real Estate Markets

The government will support the development and improvement of legal systems in the construction industry of emerging Asian countries, while working on enhancement of Japan's presence through international dissemination of information and active participation in international conferences.

Chapter 5 Improvement and Enhancement of the Land Use Plan

Section 1 Promotion of the Land Use Plan

In order to ensure smooth change and promotion of prefectural/municipal plans based on the National Land Use Plan (National Plan), the government will take necessary measures including surveys and information provision, while promoting proper and reasonable land use by properly implementing the general plan of land use.

Section 2 Promoting Proper Use of Land in City Planning

The government will promote the appropriate implementation of the “Policy for Improvement, Development and Preservation of City Planning Areas” (master plan), which is laid out in each city planning area, and formulation of the “Basic Policy Concerning Municipal City Planning” (municipal master plan). The government will also promote appropriate utilization of land use systems and support municipalities in developing location optimization plans based on the Act on Special Measures Concerning Urban Renaissance to promote formation of compact cities.

Section 3 Coordination with National Land Policy

The government will continue studies toward development of “National Land Promoting Interaction-Led Regional Revitalization,” which is the basic concept of the National Spatial Strategies (National Plan). In addition it will steadily promote regional projects taking advantage of the characteristics and resources of each block specified in the Regional Plans and using the Regional Plan Councils and other means. Moreover, the government will promote the formation of regional centers and industrial location policies, and develop transport networks and information communication infrastructure, for example.

Chapter 6 Promotion of Housing Measures

Section 1 Promotion of Housing Measures

The government strives to promote basic plans for housing, the supply of public rental housing, and the housing supply in urban areas centered on big cities, and it forms good living spaces through redevelopment of existing urban areas. While continuing support for utilization and removal of empty houses, the government will support comprehensive measures for empty houses in partnership with private companies based on a plan for empty houses and pioneering model projects in partnership with experts. Furthermore, the government will work on enhancement of measures for housing acquisition through various tax measures, etc.

Section 2 Creation of Favorable Living Environment by Promoting the Provision and Management of Good Residential Land

The government will promote the supply of good residential land, while trying to renew aged housing and public facilities and enhance functions to support living in new towns facing a decrease in various activities in the community and other challenges due to the progress of

rapid population aging and decline.

Chapter 7 Promotion of Effective Land Use

Section 1 Promotion of Local Community Invigoration and Urban Renewal

In order to create vigorous communities and accelerate regional sovereignty *reform*, the government will promote efforts to achieve integrated and effective local revitalization, including comprehensive special zones, future eco cities, urban renewal, designated structural reform districts, local regeneration, and city center vitalization.

It will also promote city regeneration in areas designated for Emergency City Regeneration as well as city regeneration nationwide, while at the same time promoting integral use of lots and reorganization of public facilities.

Section 2 Promotion of Urban Infrastructural Development and the Building of Disaster-resistance

In order to promote urban infrastructure development, the government will promote utilization of the knowhow of private companies as well as the space above and below the ground level. In order to enhance and strengthen the warning and evacuation systems based on the Sediment Disasters Prevention Act, the government will advance development of disaster-resistant towns by promoting creation and publication of sediment disaster hazard maps by municipalities, grasping their progress, promoting evacuation drills, raising residents' awareness of disaster prevention and enhancing disaster preparedness in cooperation with relevant local governments.

Section 3 Promotion, etc. of Use of Underutilized/unused Land

The government will promote redevelopment, etc. of underutilized/unused land, such as former factory sites and filled land, and use of underutilized/unused land in cities. It will also promote enhancement of city functions and economic vitality in a comprehensive and integrated manner.

Section 4 Development of Comfortable Residential Environment by Utilizing Farmland

In respect to farmland in urbanization promotion areas in regions with significant housing demand, the government will continue to promote provision of residential land with a good living environment by utilizing farmland through the farming and residence association system.

Section 5 Promotion of Town Development for Coexistence of City, Greening and Agriculture

The government will draw up a basic plan for the promotion of urban agriculture based on the Basic Act on the Promotion of Urban Agriculture, while conducting studies on systems for preservation and utilization of urban farmland.

Section 6 Utilization of Land Owned by the Public Sector

The government will promote optimal use of national and public properties in cooperation

with local governments by sharing information on national and public properties in certain areas and making coordination for optimal use of such properties while respecting opinions of relevant local governments, etc.

Section 7 Facilitation of Public Land Acquisition

In order to generate the effects of public work projects at an early stage, the government will continue to promote land acquisition in line with “Land Acquisition Management,” under which bottlenecks in land acquisition are examined and analyzed with careful preparations being made regarding all stages from the planning of projects to their future use, along with ensured schedule control.

Section 8 Promotion of Measures for Land the Owners of Which are Difficult to Locate

The government will continue studies on the promotion of measures to support municipalities’ approach to land the owners of which are difficult to locate. It will also disseminate and raise public awareness of the guideline for search and utilization of such land.

Chapter 8 Promotion of Environmental Conservation

Section 1 Promotion of Measures Concerning Environment Conservation

The government will promote land-related measures for environmental conservation and give consideration to environmental conservation in various land-related policies and when selecting and implementing projects, based on the “fourth Basic Environment Plan.”

Section 2 Appropriate Conservation of Farmland

The government will promote improvement of land conditions through infrastructure-development projects for enhancing agricultural competitiveness, etc. and subsidies for development of rural areas.

Section 3 Ensuring Appropriate Conservation and Utilization of Forests

In order to maximize the multi-functionality of forests, the government will provide guidance and advice to local governments and forest owners on the systematic development of forests based on the forest planning system provided by the Forest Act.

Section 4 Proper Conservation of River Basins

In special river basins for comprehensive flood control measures, the government will establish river basin conferences consisting of the river divisions of the national, prefectural and municipal governments, and other divisions related to city, housing and land, as well as create river basin improvement plans to encourage proper land use in river basins and the control of rainwater runoff.

Section 5 Promotion of Proper Protection of Cultural Property and Creation of Favorable Landscapes Taking Advantage of Local History, Culture, etc.

As for historic villages and streetscapes, the government will provide guidance and advice to municipalities regarding the preservation and utilization of conservation zones for clusters

of traditional structures. For landscapes created through interaction between people and nature, the government will advance the selection of important cultural landscapes while working to preserve and use them.

Chapter 9 Measures for Recovery/Reconstruction from the Great East Japan Earthquake

Section 1 Measure in Relation to Land Use

As measures concerning residential land, the government will promote measures against tsunami disasters, such as projects for promoting mass relocation for disaster prevention, projects to develop post-tsunami restoration centers and projects to enhance disaster prevention functions in fishery settlements and also sediment disaster countermeasures and liquefaction.

The government will also implement projects to recover farmland and agricultural facilities from the disaster, remove salt elements, and rearrange land in conjunction with the recovery and the removal, while supporting affected farmers who resume farming activities using devastated farmland in the place of their evacuation or other areas that escaped disaster.

Moreover, for land use reconstructing, the government will promote utilizing various special provisions of land use based on land plan system prescribed by the law for special zones for reconstruction and support the smooth and prompt implementation of projects to develop urban areas and agricultural production bases.

Section 2 Measures in Relation to Housing

The government will support the provision of public housing for disaster victims. It will also support disaster victims in rebuilding their residences by providing housing loans for disaster reconstruction and application of a special provision for disaster victims taking loans from the Japan Housing Finance Agency, as well as preferential measures on loaning for promotion of workers' property accumulation.

Section 3 Efforts for acceleration of residence rebuilding and urban renovation

In order to ensure that the construction of disaster public housing, development of land for private housing and other projects will advance according to the plan, the government will steadily implement the successive acceleration measures that have been taken by the "task force for acceleration of house reconstruction and post-earthquake town reconstruction," while at the same time providing municipalities with finely-tuned practical support through the "land acquisition acceleration task force" and the "construction acceleration task force."

Section 4 Measures in Relation to Land Information

The government will promote clarification of land boundaries through support for affected local governments in accordance with the implementation status of cadastral surveys and development of maps for registries. The government will also provide the land measures departments of Iwate, Miyagi and Fukushima prefectures and Sendai City with information on

registration and prices of land transactions in the respective prefecture or city.

Section 5 Tax Measures

The government will continue the tax measures at each stage of land acquisition, holding and transfer, as they are necessary to promote the reduction of burdens on victims of the Great East Japan Earthquake as well as efforts toward recovery and reconstruction.