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Future Prospects of Korea's National Territory

Lee Yong-woo, senior research fellow

By 2030, Korea will become the world's tenth largest economic powerhouse in terms of GDP and an advanced country with USD 50,000 per capita GDP. The population will exceed 49.34 million in 2018, only to decrease to 48.63 million in 2030. By 2030, Korea will become a highly aging society, with 24.3% of the total population aged 65 years and older. Single-person households will also rise above 25%, and Korea will become a multicultural society. New technologies centered on INBEC[1)] or FT(Fusion Technology) industries will be developed, with a new breakthrough to be presented to solve the problems of mankind through technology convergence and compound.

Housing Developments

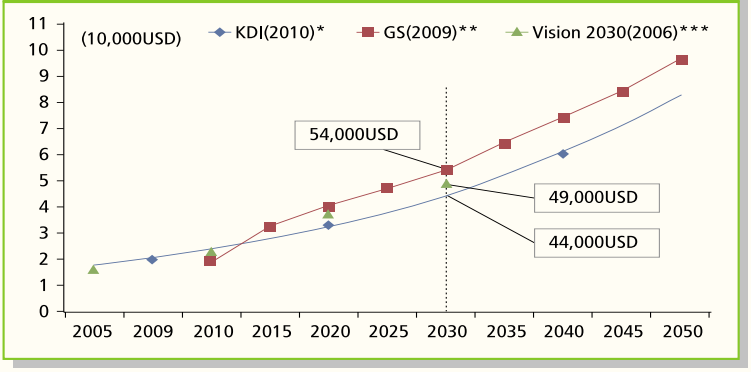
Given the low birth rate, decreases in population, and housing supply rate of more than 100%, Korea's housing market will be stabilized. The housing demand is estimated to decline gradually from 460,000 in 2010 to 410,000 in 2020 and to less than 410,000 in 2030. Housing prices are likely to be stabilized, and there is a low possibility of a sudden turn in housing prices.

The demand for small houses will increase, so various small housing types will be supplied and niche housing market will be created. The demand for a second house for leisure and recreation is also likely to grow, especially centered on waterfront spaces. The size and level of rented housing will become diversified, and demand for rented housing will increase. Housing targeting specific purposes or demand brackets will need to be supplied.

Dwellings are a basic requirement for future housing, and e-

1) INBEC stands for IT(Information Technology), NT(Nano-Technology), BT(Biotechnology), ET(Energy and Environment Technology), and CT(Culture and Cogno Science Technology).

Figure 1: Prospects for Korea's per Capita GDP



Source: Presidential Council for Future & Vision, Data Presented to the 7th Council Meeting, in 2010.
*KDI: Korea Development Institute, Future Vision 2040
**GS: Goldman Sachs, Global Economics Paper
***Vision 2030: The Presidential-Advisory Committee for a Policy Planning, A Comprehensive Long-term National Strategy

learning and tele-care functions are likely to be compounded with concepts of leisure space and workplace. Thus, housing will be more convenient with the newest functions and will include green housing through the combination of resource savings and technologies of energy production. People can enjoy a rural lifestyle even in apartments, and detached houses will be as convenient as apartments.

As for housing types, relocation toward the outskirts is predicted to emerge in the forms of purchasing rural houses for retirees or second houses for wealthy households. Meanwhile, as unmarried single-person households and elderly households are expected to prefer residing in the city area, housing types will be diversified. Multi-habitation and invisible families will increase, and international multi-habitation will emerge.

Futures of existing houses will depend on regions and housing types. The existing apartments in metropolitan areas are expected to be remodeled or reconstructed, and those in agricultural, mountainous, and fishing villages are likely to become decrepit. Low-rise housing can be redeveloped as apartments or town houses. Rural housing in metropolitan areas is projected to be repaired or used as second houses.

Industrial Location

One promising future industry is the FT industry, wherein INBEC technologies are combined. The FT industry is expected to develop centered on metropolitan areas, where a high level of human resources and implicit knowledge can be easily acquired and where infrastructure services such as transportation, communications, business, and living environments are well established.

Location demand for manufacturing industry will change according to international competitiveness. Important variables related to the demand for future industry locations include the advent of the Chinese economy and international competitiveness of the industry. If structural enhancement fails in the future, the decline of location demand for key industrial clusters in the Seoul Metropolitan Area, Chungcheong, and Yeongnam regions is predicted. Meanwhile, when the network with China's three major economic regions namely, Chang Jiang, Zhu Jiang, and trans-Balhae is strengthened, the demand for industrial location in the west coast regions can increase.

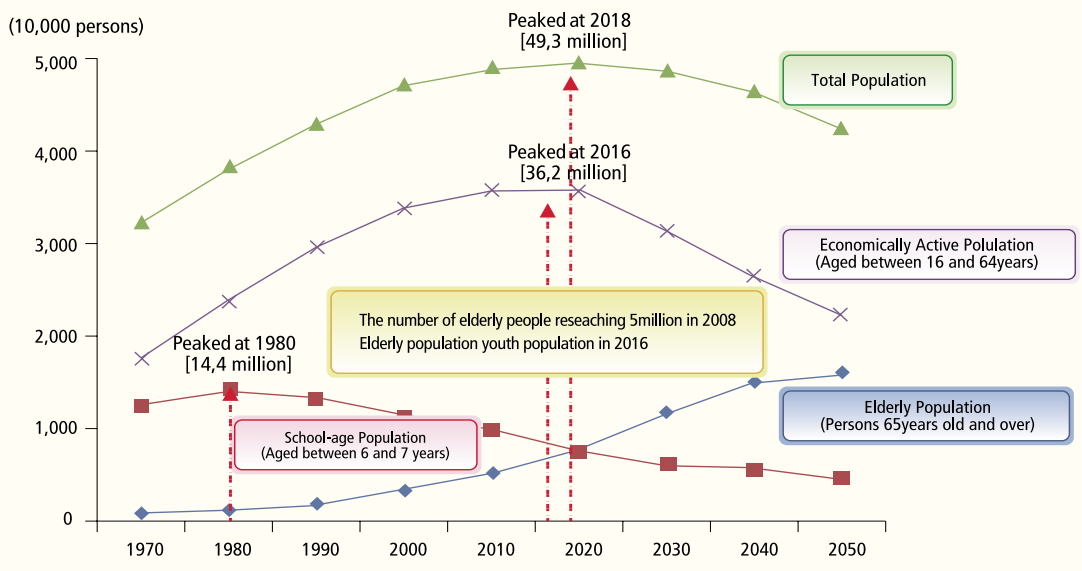
Industrial spaces will become compound, rented, and eco-spaces. The overall need to develop large-scale industrial complexes led by the public sector is expected to diminish. Futures of industrial spaces in the metropolitan areas can be compounded into hybrid types. The private sector's weight can increase the industrial location supply, and the demand for rental locations is expected to rise. Moreover, intelligent and green industrial spaces are expected to become popularized as eco-spaces.

Transportation

Traffic jams during rush hour will be eased. The need for passage and the number of passing cars and people are predicted to decline. The time to work at companies will also be reduced.

Public transportation means in metropolitan areas will be diversified. In metropolitan areas, public transportation means including city railways can be diversified and the transportation sharing ratio is likely to increase. To ease traffic jam in metropolitan areas, policies to reduce traffic demand and parking limit systems in city centers are expected to be

Figure 2: Korea's Peak Population by Age Group



Source: The Korea National Statistical Office, Population Projections for Korea, 2006.

actively implemented.

U-Green cars and roads will become popular. The number of cars per 1,000 people as well as preferences for cars are likely to continue to rise and at least one out of every two people owns one vehicle. In other words, every car owner over the age of 20 has more than one car. In the future, more environmentally friendly and smart cars will become prevalent, contributing to considerations for basic functions such as quality, price, and fuel efficiency. U-Green roads including smart roads and solar energy roads may become important as well.

Super high-speed railway network will be expanded, and spatial structure of both national territory and Northeast Asia will be reorganized. Since new national territorial axes are projected to be shaped along a new super high-speed railway network on the east, west, and south coasts, the whole national territorial axes are expected to be reorganized. Major cities will most likely be one hour away. Urban development and city regions can be consolidated by being centered on stations influencing areas of the high-speed railway network.

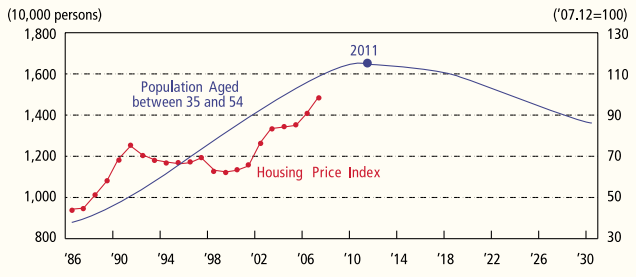
New logistics systems including an underground tube, container conveyor belt, and high-speed logistics trains will be adopted, and an unmanned automatic container transportation system is projected to become operational. Thus, logistics speed will improve innovatively. A multimodal system in which passengers can transfer to other forms of transportation and cargo can be shipped may develop. If the North Pole route is opened due to climate change, the logistical competitiveness of Korean ports will be enhanced in Northeast Asia.

Land Use

Environmental value of farmland and mountainous land will improve. Farmland is expected to be reduced, thus, securing adequate farmland will become critical to the food security dimension. The value of mountainous land can be re-valued as the perception of the forest's carbon absorption function is enhanced. Residential demand by people returning to farming or retirees seeking second houses in agricultural, mountainous, and fishing villages located in easily accessible places or surrounded by superb natural landscapes is expected to increase.

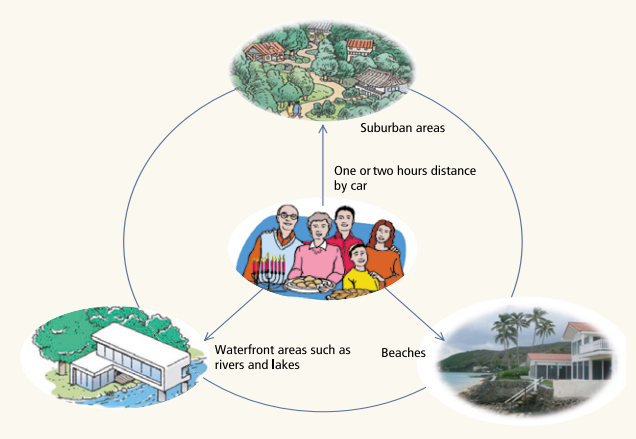
Waterfront spaces are expected to be activated as leisure, cultural, and health spaces. In particular, in waterfront spaces along city rivers, cultural and information exchange functions can be consolidated through approaches between city centers and

Figure 3: Change in Population Aged 35-54 and Housing Price Indices



Source: The Korea National Statistical Office, Analysis on Factors of Social Change over the Next 10 Years and Implications, 2009.

Figure 4: Concept of Second Home



waterfront spaces. The spatial structure of the city can also be shifted from the long-term perspective centered on waterfront spaces.

Diverse demand for leisure tourism will increase. As leisure time increases, people can enjoy diverse leisure activities and in particular, city leisure tourism is projected to rise. Leisure tourism in agricultural, mountainous, and fishing villages with a high attraction factor can be activated. However, benefit disparities arising from leisure tourism service between cities and between income brackets are expected to persist.

Demand for urban land will increase gradually. Although the rate of increase in the demand for whole urban land is predicted to slow down, the demand for public land is expected to rise. While energy-efficient management of national territory for green growth is emphasized, urban regeneration is likely to be a general trend rather than a new development project. Regional differences in urban regeneration patterns are likely to occur.

Large cities will become multi-layered and compound. City spaces centered on large cities are likely to become multi-layered and compound. As more high-rise and underground buildings are built in cities, a disaster-prevention, pleasant environment will be critical.

City services will become intelligent, diverse, and barrier-free. Future cities are expected to become intelligent with the development of science and technology. Demand for various city services will increase, and zero disturbances are likely to be a general trend. However, benefit disparities can deepen according to residential area and income level in terms of future intelligent, diversified, and barrier-free city services.

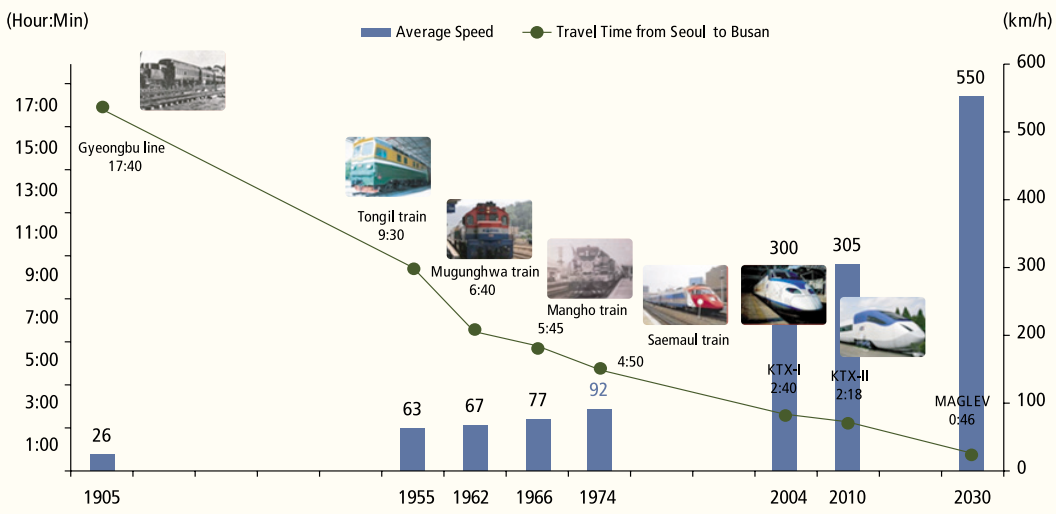
Abnormal climate changes are projected to take place more frequently and strongly, thus, natural disasters will frequently occur and become more large scale. Facilities and services for the underprivileged are predicted to increase. Despite the low possibility of disasters arising from earthquakes and tsunamis, they cannot be completely excluded.

Future Prospects of National Territory and Policy Agenda

Concerning the common future images of national territory, perceptions of sustainable national territory development are enhanced, the response to demand for land use focuses on urban regeneration, and land use becomes diversified. Although a U-Green national territorial era is unfolding, the image of national territory shows the occurrence of natural disasters due to severe rainstorms or super typhoons. By wrapping up the impacts of megatrends on national territory and future scenarios, a desirable image of national territory has been established as "Sustainable U-Green National Territory."

In the future, the demand for the development of national territory is not likely to increase as much as it did during its high-growth period, relying on

Figure 5: Changes in Travel Time from Seoul to Busan by Train



changes in population, industrial structure, and individual consciousness. Accordingly, the soft power of national territory, which enhances both the health and beauty of national territory by utilizing inherent natural resources for value-added resources, will be more important than the hard power of national territory, such as quantitative expansions of housing, industrial location, transportation, and infrastructure. Without development projects focused primarily on the outward expansion of developed areas, there is a need to transform national territory into safe, convenient, and pleasant spaces where various users of national territory can manage their own economic activities or everyday lives.

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Industrial Location Policy Directions for Green Growth

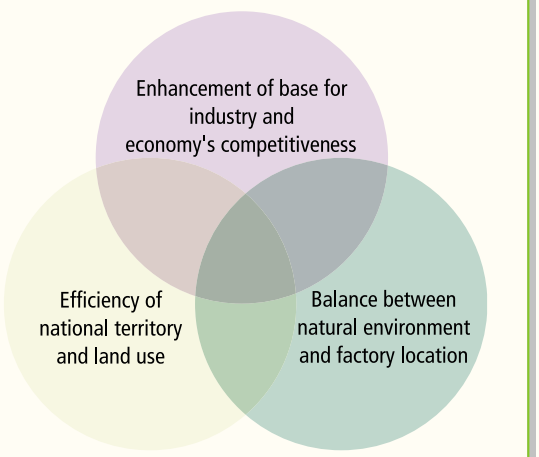
Ryu Seung-han, research fellow

The term “green growth,” which was coined to cope with climate change, is becoming a prerequisite for local development and a new paradigm affecting various fields in society. Green growth requires change in life and territory use as well as change in industrial technology. Accordingly, applying the new paradigm of green growth is being common in various fields, such as economy, city, and transportation as well as industrial location policy.

The three main goals of the Korean Industrial Location Policy are as follows: smooth supply of industrial land and reasonable arrangement of the industry; balanced development of territory and continuous promotion of industrial development, and; balance between industrial locations and environment. The development of the industrial park by the public sector has been applied as the main means to accomplish these goals.

Regarding the goal of the industrial location

Figure 1: Goals of the Korean Industrial Location Policy



policy through its relation with green growth, it can be classified into the industrial location policy for the green industry and the industrial location policy for the creation of green territory.

Fostering the Green Industry

Despite the international attention, much controversy remains regarding the range of the green technology industry, which can also be divided into various categories. Statistics Korea is using the term "environmental industry" in the same breath as the green industry. It is defined as activity that produces goods and services to measure, prevent, control, and minimize environmental factors harmful to water, air, and soil as well as waste, noise, and issues related to the environmental system. This includes various kinds of industries such as the new regeneration energy industry to use resources and energy more efficiently as well as treat or prevent pollution. It can be divided into three categories: pollution control, clean production, and resource management.

Current Status of Korea's Green Industry

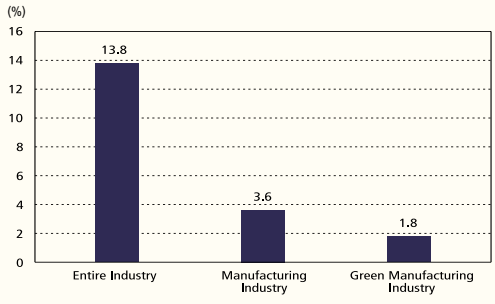
As of 2007, the green manufacturing industry in Korea employed 736,253 persons, or 22.08% of the entire manufacturing industry. Compared to 1997, employment in the green manufacturing industry shrank by an average of 0.53% per year, falling short of the increase in employment in the manufacturing industry by 0.07% during the same period. Such declines are definitely different from the general expectation; i.e., the green industry shows a higher rate of increase in employment. The more important fact is that the rate of individual companies that actually advanced into the green industry is unlike the rate of firms classified as green growth companies by the Korea Standard Industrial Classification extremely insignificant.

For example, a survey conducted by the Korea Federation of Small and Medium Business revealed that only 2.4% of small and medium businesses advanced into the green industry, with only 7.9% attempting to do so. Specifically, there are only a few companies that fall within the category of the green industry in the Korea Standard Industry Classification and actually participate in the green industry; thus, the Korean Green Industry is still in its infancy.

Meanwhile, according to the regional distribution of the green industry, the green industry is said to be growing faster in the low-developed area. According to the change in employment in the green industry in each province for the last 10 years, among areas where employment in the manufacturing industry recorded positive growth, all areas that have a higher rate of increase in employment in the green manufacturing industry than that of the entire manufacturing industry show relatively low development level for the manufacturing industry. This can explain why low-developed areas in Korea have recently taken a keen interest in attracting the green industry.

Still, the green industrial location can hardly be said to be widespread to the low-developed area because the Korean green industry currently has the characteristics of a traditional manufacturing

Figure 2: Areas with Employment Rate of 50% in Each Industry



industry that is stronger than a true green industry. Moreover, even the green industry located in the low-developed area tends to be concentrated on a growth pole developed in that area. According to the location of the green industry in Eup(town), Myeon(district), and Dong(neighbourhood), 13.8% or about 3,500 Eups, Myeons, and Dongs in Korea account for 50% of employment in the entire industry. In comparison, 3.6% and 1.8% make up 50% of the employment in the entire manufacturing industry and green manufacturing industry, respectively. Such a tendency has not changed during the last 10 years.

Measures to Boost Green Industry

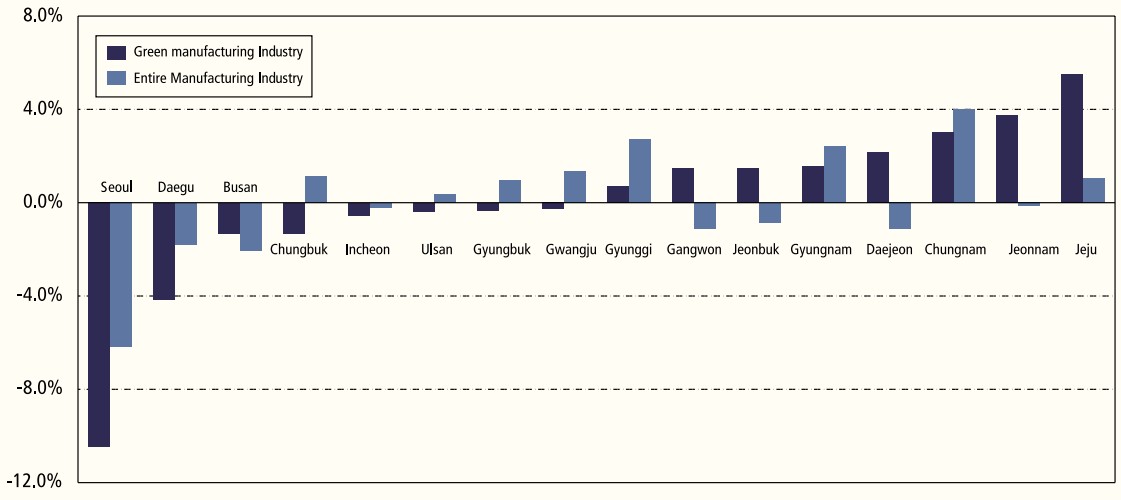
As a result of analyzing the correlation between employment in the green manufacturing industry and other elements to examine the factors affecting the location of the green manufacturing industry in Eup, Myeon, and Dong, employment in the green manufacturing industry is most closely related to that in other manufacturing industries. This result suggests that it is difficult to achieve the objective with the development of an industrial park by trying to attract only companies that mass produce products in the field of green industry because the Korean green industry is still at an initial stage of growth, with a strong connection with the existing manufacturing industry.

Thus, the need exists to promote the industrial location policy to foster the green industry focusing on support for the greening of existing industries, the construction of clusters among related companies such as an eco-industrial network rather than physical agglomeration, support for the commercialization and cultivation of markets, support for the installation of public facilities required for the green industry, etc. The development of industrial parks should also be promoted by focusing on the small-scale science park to support the commercialization of key technology instead of aiming at attracting mass producing companies. In addition, the promotion of the project should be reviewed at the great-sphere economic bloc or the national level not at the local government level to secure economies of scale for facilities.

Creating Green Territory

From the perspective of territory development and use, the most important task for green growth in the industrial location policy is to suppress the haphazard, unnecessary development of industrial land while simultaneously establishing a green image not gray for the industrial land. The main goal of the Korean Industrial Location Policy is to supply industrial land intentionally and collectively by developing the industrial park. Despite restrictions on the haphazard development of

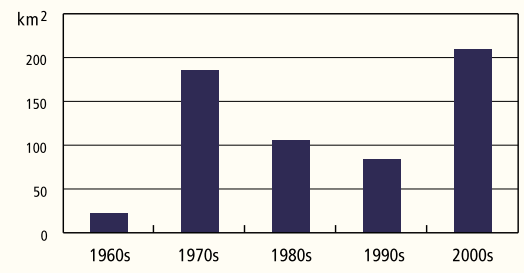
Figure 3: Annual Average Rate of Increase in Employment of 16 Metropolitan Cities



factory sites for the last 40 years, the industrial park now makes up only approximately 50% of the entire industrial land in Korea.

Meanwhile, the government has not given any support to the industrial cluster except for the industrial park to encourage individual plants to relocate to the industrial park. However, this result led to the increase in industrial areas wherein the environment or infrastructure is not properly managed, not the relocation of the company to the industrial park from the outside.

Figure 4: Area of Industrial Park Designated in Each Period of Time



Tasks to Promote Policy Effectiveness

Accordingly, the need exists to establish a measure to secure the effectiveness of the industrial location policy as follows: first, prepare support measures to promote the business location in the industrial park and, second, minimize the damage from thoughtless development to the environment caused by the factory location outside the industrial park, while further supporting the maintenance of the environment in the existing industrial cluster.

On the other hand, the development of the industrial park does not always contribute to the creation of a green territory. Nowadays, the designation of industrial parks is rapidly increasing in Korea. Despite the gradual slowdown in the growth of the manufacturing industry, the area of industrial parks designated since 2000 is larger than that in the 1970s, when Korea saw sudden industrialization.

Accordingly, people have expressed concerns about the excessive supply compared with demand and the long-term neglect of the designated industrial park without factory construction. On the other hand, many industrial parks developed in the 1960s and 1970s are losing their competitiveness due to the lack of infrastructure and green space.

Therefore, the government needs to enhance the efficiency of land use by promoting the regeneration of the existing old industrial parks prior to the designation of a new industrial park. The regeneration of existing industrial parks brings about various effects, such as the improvement of urban environments, the supply of business locations, and the minimization of damage to farmland and forests. However, huge costs will be required to secure infrastructure or public facilities because most of the industrial parks are located in cities. Thus, it is impossible for companies to bear that cost.

Accordingly, the government needs to shoulder some of the projected costs to ensure the economic feasibility of such regeneration projects. Furthermore, the regeneration of small factory sites neglected in cities needs to be promoted. A survey by the Korea Industrial Park Corp. revealed that 196 companies among those with 100 or more employees in the capital area recently moved to the provinces, but most of their existing sites were developed as housing sites.

In some areas, there are restrictions on the construction of houses on the existing factory site; such sites are now neglected due to the absence of a plan for application that can satisfy the stakeholders. Accordingly, the regeneration of small factor sites should be supported for the purposes of employment, including the regeneration of large industrial parks.

Going Green of Industrial Complex

The last task of the industrial location policy to create green territory is the greening of the industrial park. As one of the representative land development projects, the industrial park typically has a gray image. The greening of the industrial park is a prerequisite to the realization of green territory as well as one of the starting points to lead green growth. The greening of the industrial park which is spatially separated from other functions such as dwelling or commerce and which becomes an unwelcome facility can contribute to the greening of national territory and urban spaces as well as facilitate the integrated development of industrial

and urban, manufacturing, and living spaces.

In addition, the greening of the industrial park has environmental effects as well as positive effects on industrial park developers, companies, and communities. Moreover, it is expected to improve the image of the community, location environment, and health environment in the community; companies can also expect some positive effects, such as the improvement of efficiency in managing the environment, reduction of expenses for waste disposal, facilitated search for workers, and increases in land values.

The greening of the industrial park requires a reflection upon the elements of green growth from the planning stage. In addition, the need exists to support the construction of green infrastructures in the industrial park, such as environmental treatment facilities, new generation energy facilities, and resource recycling facilities.

Meanwhile, the enhancement of management standards for construction in the industrial park, reinforcement of responsibility for landscaping architecture on the factory site, and landscape management in the industrial park, etc., should be reviewed, and a support measure should be prepared to ease the burden on business due to the rising costs expected with the enhancement of standards. Finally, the need exists to review the plan to strengthen the capability of the industrial park management agency to support the service function required for green growth.

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Diagnosis and Forecast of Real Estate Market Using Consumer Sentiments

Lee Soo-wook, research fellow

When real estate markets are in a stable condition, fluctuations of real estate prices can be explained by fluctuations in the present value of profits. Note, however, that in reality, there are often abnormal situations in which real estate markets should be explained mainly by extreme changes, such as surging real estate prices.

Previous studies analyzed, via various methods, Korea's real estate markets and presented policy improvement suggestions to advance the real estate market and increase policy effectiveness. Still, despite such efforts, some have expressed the opinion that the explanation capabilities for the real estate market should be consolidated.

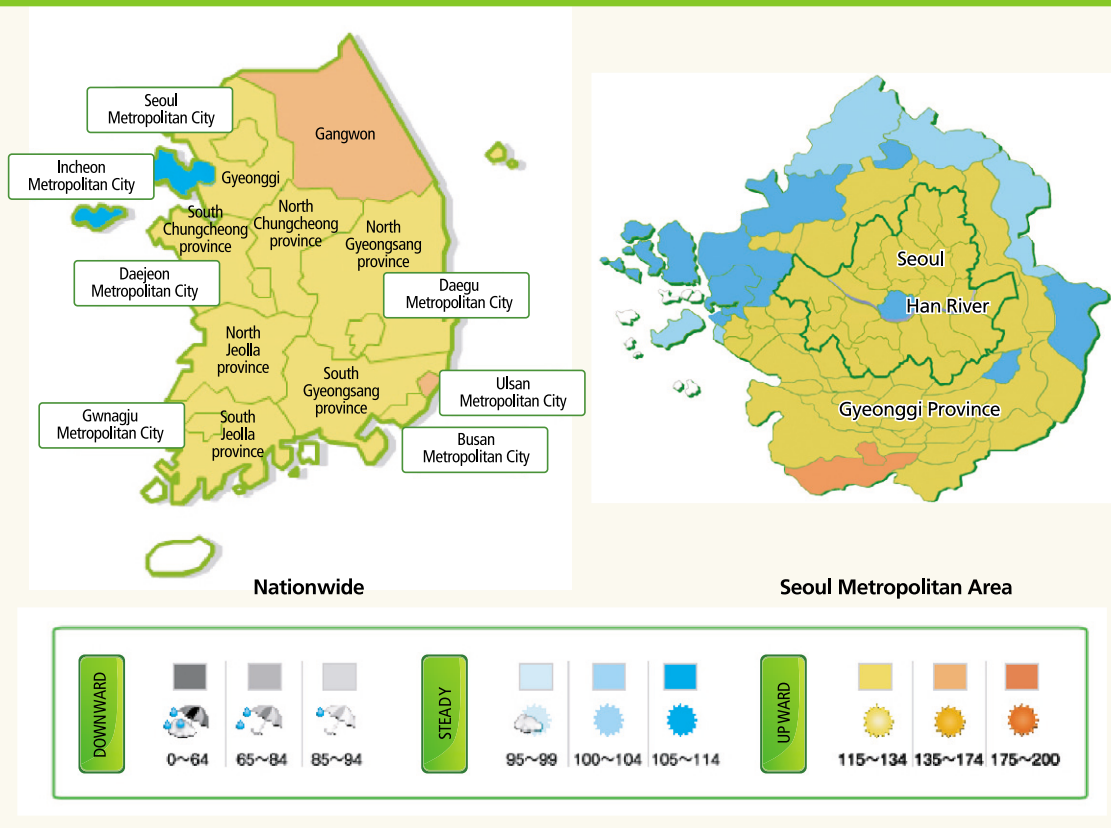
As of 2000, the real estate market in Korea has become more segmented due to the expansion of the housing supply and easing of socio-economic fluctuations, as well as more complex behaviors of market participants. Consequently, it is even more difficult to establish suitable policies by identifying possible changes in the real estate market, or to stabilize the market.

However, there is a strong argument that, rather than being due to a localized and segmented real estate market, this trend is primarily attributable to a phenomenon not easily explained by traditional economic theories or measurement techniques. This argument posits that consumer behaviors in the real estate market take on various forms depending on the real estate market's internal environment changes. Accordingly, the consensus is growing that consumer sentiment should be actively reflected when analyzing real estate markets.

Yet, proper means to reflect consumer sentiments have yet to be found. Although some studies revealed that coefficients change when a variable of consumer sentiment is added to real estate prices, they were in fact nothing more than what we perceived them to be.

It is well known that one of the most useful research methods to measure consumer sentiment is the survey, a non-quantitative method widely used in not only real estate markets but also general markets. Surveys help to identify users' disposition or recognition levels regarding real estate markets. For instance, people

Figure 1: Real Estate Consumer Sentiment Index by Region and Nationwide



tend to become more risk-averse when real estate prices fall, leading to an increase in housing sales. On the other hand, people are more risk-prone if housing prices rise, because they have higher expectations of a further rise in housing prices. Or there is a distinct difference in real estate value appraisals as perceived by housing owners and tenants.

As described above, surveys allow us to quickly identify consumer behaviors in real estate markets—which are greatly influenced by real estate policy and economic situations—and subsequent consumer decisions. In this regard, the survey is the most effective method of analyzing real estate markets.

Introducing the Real Estate Consumer Sentiment Index(RCSI)

The Consumer Sentiment Survey helps users more precisely identify changes in real estate markets. Some studies conducted in the U.S. and the Netherlands have already concluded that analyzing real estate markets by measuring consumer sentiments has a stronger explanation capability.

In Korea, however, there has been little effort to conduct consumer sentiment analyses and to calculate indices related to the real estate market as estimated by trusted evaluation institutes. This has made it difficult to understand the real estate market in a more practical way.

Realizing the importance of the issue, KRIHS has conducted consumer surveys to accumulate data of real estate consumer sentiments since 2009. As a result of its efforts, for the first time in Korea, the KRIHS-conducted "Real Estate Consumer Sentiment Survey" and its subsequent "Real Estate Consumer Sentiment Index (RCSI)" were approved as national yardsticks by the National Statistical Committee in June 2010. Since August 2011, KRIHS has compiled and published the "Real Estate Consumer Survey Index" on a monthly basis.

The "Real Estate Consumer Sentiment Index" has been well received, since it serves as a useful basis

Table 1: Survey Areas for the RCSI

Region	Classification
Seoul metropolitan area	Seoul Metropolitan City(25 Gus), Incheon Metropolitan City(9Guns/ Gus, except Ongjin-gun), 44 Sis/Guns/Gus*
Local metropolitan cities	5 Metropolitan Cities(39Sis/Guns/Gus)
Local cities	33Sis/Guns/Gus

*Sis/Guns/Gus are the intermediate units of Korea's administrative divisions, similar to cities, counties and districts of the U.S.

to identify real estate market trends and make market forecasts. KRIHS, a state-funded research institution, enjoys public trust, particularly since it has secured the longest published time-series data in Korea. For this reason, there has been a steady increase in the use of the index from various sectors including the general public, experts, relevant industries, and academia.

Conducting the Real Estate Consumer Survey

A survey analyzing consumer sentiment is conducted targeting 6,400 general households and 2,400 real estate agents in 150 regions including Si, Gun, and Gu in Korea. The target areas for the survey are shown in <Table 1>. The survey is conducted by phone across different time periods for both real estate agents and general households during the last week of each month and the last week of each quarter, respectively.

The survey contains 16 items, including housing selling/purchasing trends compared to previous month, housing rental/lease trends, housing and land prices and their transaction trends. Each item is developed into an index and measured using the following equation for analyzing and forecasting the real estate market.

Individual index equation by survey item :
$[(\text{very high} \times 1 + \text{high} \times 0.5 - \text{low} \times 0.5 - \text{very low} \times 1)/\text{number of respondents}] \times 100 + 100$

Compiling the RCSI

KRIHS has conducted surveys of general households and real estate agents in 150 urban regions in Korea to measure real estate consumer sentiment and create a market outlook. The results comprise into the Real Estate Consumer Sentiment Index, which is built by combining the Consumer Sentiment Index for Homes consisting of housing sale and rent prices, demand and supply trends of housing and lease/rental, and housing and Jeonse (a unique housing lease system in Korean) transaction trends with the Consumer Sentiment Index for Land, comprised of land sale prices, demand and supply trends of land, and transaction trends of land. In sum, the Real Estate Consumer Sentiment Index is a

Table 2: Classified Phase of the RCSI

Classification		Index
Downward phase	3step	Below 65
	2step	65 ~ 85
	1step	85 ~ 95
Steady phase	Steady with downward tendency	95 ~ 100
	No change	100 ~ 105
	Steady with upward tendency	105 ~ 115
Upward phase	1step	115 ~ 135
	2step	135 ~ 175
	3step	Over 175

Figure 2: Consumer Sentiment Index Diagnosing/ Forecasting Nationwide Real Estate

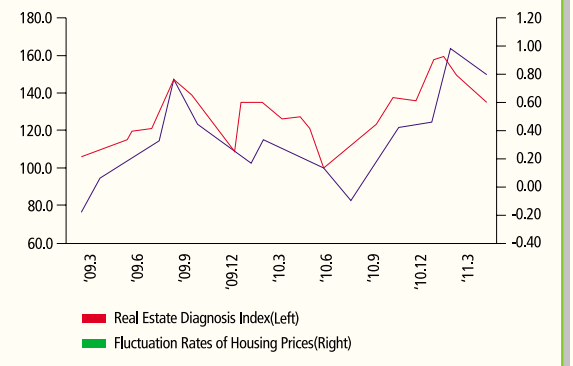
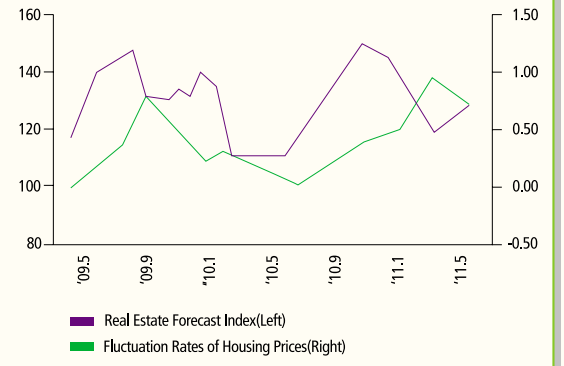


Figure 3: Fluctuation Rate of Housing Prices



comprehensive value system that aggregates overall market participants' recognition of real estate business cycles including housing, rental and land.

The Real Estate Consumer Sentiment Index (RCSI) is designed to measure levels of consumer sentiment toward the overall real estate market trend. Thus, it is important to help users better understand the system. The lowest and highest values of the consumer sentiment index have been adjusted to be 0 and 200 respectively. To show the level of consumer sentiment by region, the consumer sentiment index is divided into 9 classes and marked on the map (see Figure 1 on page 10). Thus users can identify a current regional status in the index by region as well as nationwide status, which is expressed in 3 stages (steady, upward, downward) and 9 steps (3 steps in each phase) on the map.

When the index is between 95~115, it is considered that the level of real estate consumer sentiment remained almost unchanged from the previous month. Indices below 95 confirm a downtrend; over 115 confirm an uptrend of real estate consumer sentiment.

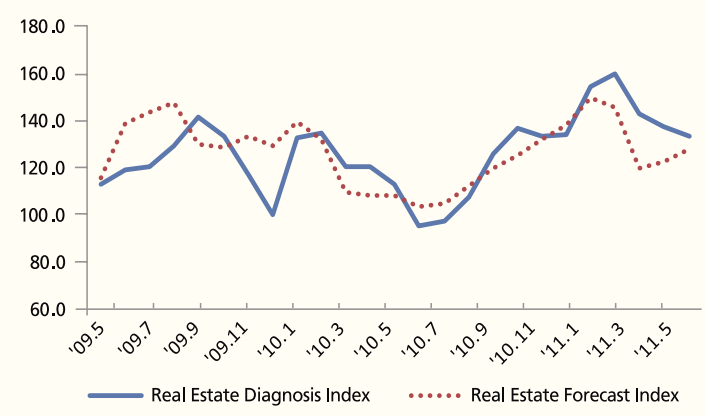
Utilizing the RCSI

Along with various social and economic indices, the Real Estate Consumer Sentiment Index serves as a useful tool to predict possible changes in the real estate market because it helps identify consumer behaviors in the real estate market. As mentioned earlier, the Real Estate Consumer Sentiment Index is closely associated with price changes, so it can predict an infection point in real estate markets.

The evaluation results on verifying correlation between real estate prices and the Real Estate Consumer Sentiment Index indicate that the Consumer Sentiment Index Diagnosing Real Estate appeared to coincide with or lead by one month against the fluctuation rates of housing prices in Korea, while the Consumer Sentiment Index Forecasting Real Estate had a lead of one or two months against the fluctuation rates of housing prices in Korea.

As for the correlation between the

Figure 4: Changes of Consumer Sentiment Index Diagnosing/ Forecasting Nationwide Real Estate



consumer sentiment indices, the Consumer Sentiment Index Forecasting Real Estate was found to lead by about one month against the Consumer Sentiment Index Diagnosing Real Estate.

Analyzing and forecasting real estate market trends using consumer sentiments is expected to increase. Thanks to three years of efforts, KRIHS has built a solid foundation for analyzing and predicting the market. If continuous efforts are made to increase surveyed target groups and enhance the survey credibility, the Real Estate Consumer Sentiment Index will become an upgraded model whose explanation power is more consolidated. Furthermore, efforts to publicize the excellence of the model throughout the world will be made. Then, it will not belong before readers encounter the KRIHS-initiated model through major relevant literature.

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Establishing a Housing Safety Net for the Public Rental Housing Residents

Chun Hyeon-sook, research fellow

Korea's housing policy has focused on homes as buildings thus far. In other words, the core theme of the housing policy is: "How many homes should be supplied, and where do they need to be supplied?" Regarding the low-income bracket, the question has been how many publicly supported rental homes or small-sized homes should be supplied and to whom they should be distributed.

Note, however, that housing is one of the most fundamental factors in human life. Therefore, the resident's quality of life as well as residential space needs to be considered. Quality of life refers to the level of personal welfare or happiness. A residence is one of the extremely important factors that can enhance quality of life, but doing so is difficult and requires solving residential problems. For this reason, a comprehensive approach should be taken with regard to factors including income, education, and health.

The housing safety net is a system that protects and supports the economic population bracket that cannot typically afford to reside in healthy and safe dwellings, and that suffers from poor quality of life because residential expenses are excessive compared to incomes. Therefore, housing policies for low-income residents should be approached from the perspective of building a housing safety net.

As a result of the continuous supply of public rental housing for the past 20 years, Korea's long-term public rental housings in 2009 numbered 1,311,000 and accounted for 9.1% of the total

Figure 1: RIR, Monthly Average Management Costs and Management Costs/Income by Rental Type

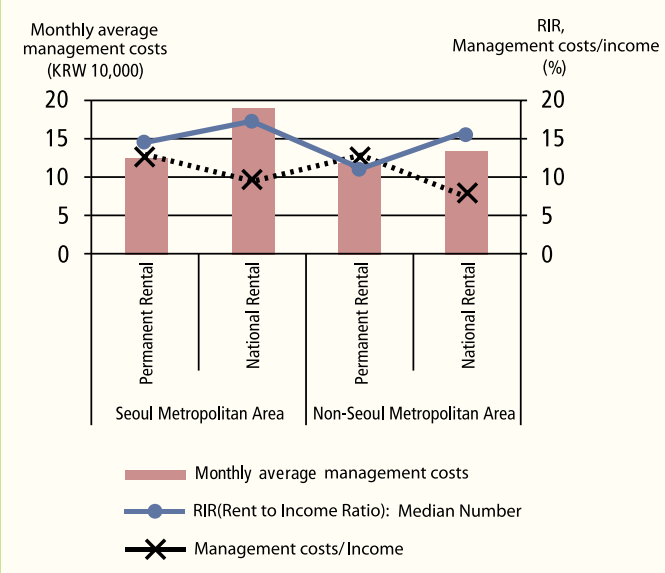
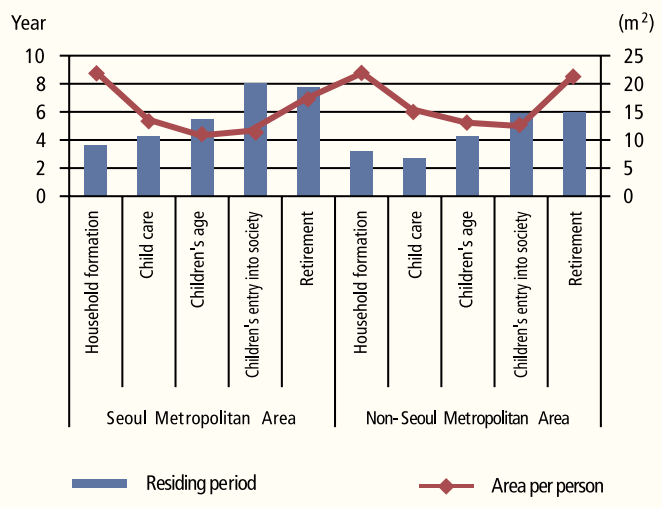


Figure 2: Residing Period and Area per Person by Lifecycle



number of homes in Korea (14,456,000). Note, however, that the percentage of long-term public rental housing for more than a period of 30 years—except for those publicly provided homes that were designated to be put on the market after a certain period of time, i.e., five years or ten-years—amounts to a mere 4.8%, falling short of the average of OECD countries.

Characteristics of Korea's Public Rental Housing

Korea's public rental housing mainly consists of three types: the Permanent Rental Housing provided to basic living allowance beneficiaries, the Public Rental housing for periods of 5 years to 10 years, and national rental housing. The second type refers to homes converted into property to be sold after 5 or 10 years of renting. The National Rental Housing is used as rental housing stock for 30 years, and residents can live without time limitations when the income requirements are met.

Although national policy has focused on the expansion of public rental housing supply, now is the time to seek efficient measures to manage the existing public rental housing. Aside from physical inventory control, there is a growing need to manage those who are waiting for public rental housing.

When the residential situations of public and private rental housing are compared, we found that residents of long-term public rental housing lead more stable residential lives thanks to lower management costs and longer residing periods, although the average size of public rental housing is slightly smaller. The average residing period of residents of permanent rental housing in the Seoul Metropolitan Area is 8.6 years, which is the longest among the three main residential types mentioned above. Note, however, that the prolonged residing period also means that it is difficult to accumulate assets and overcome poverty due to reliance on public residential support.

We also found that the lifecycle distributions have some differences according to rental housing type. Depending on the household's lifecycle stage, there is a need to adjust residential consumption. As shown in <Figure 2>, there are big differences in the residential area per person according to lifecycle stage, with households of retired people taking up the largest area. In Korea, however, residents of public rental housing are not allowed to move between regions where public rental housing is located or within the same apartment complex.

Thus, even when residential movement is

Table 1: Status of Home Usage

Category		Residing period (year)	No. of rooms used	Area used (m²)	Area per person (m²)
Seoul Metropolitan Area	Permanent rental	8.6	2.1	32.7	12.9
	National rental	2.8	2.2	49.8	16.5
Non-Seoul Metropolitan Area	Permanent rental	6.7	2.1	34.7	15.2
	National rental	2.6	2.2	52.5	16.8

necessary, residential defects force residents to adapt rather than relocate. If a retired couple hopes to downsize to a smaller home after their children leave home, residential movement is impossible.

Since these problems were actually been caused by the concentration on public rental housing supply arising from an initial lack of rental housing, no housing inventory management measures have been established. Thus, an integrated information network measuring the inventory of public rental housing, residents, and candidate residents should be built.

Ways to Support Public Rental Housing Residents

The average income level of public rental housing residents is lower than that of those who reside in private rental housing. Furthermore, these residents are often financially unstable because many of them hold temporary jobs. Continual public support can lead to such problems as taking assistance from the government for granted and a diminishing will to work. To encourage residents of public rental housing to actively seek a better life, job information, consulting, and training need to be offered in addition to housing. Offering job-related services according to region of public rental housing is also desirable. Training in baking, cooking and the like can be activities that the low-income population can engage in easily.

Actually, baking training is already actively targeting basic living allowance beneficiaries, and good training results have been generated. There are also public rental housing complexes that offer part-time jobs in the making and selling of handcrafts. All these activities can contribute to income creation and quality of life.

Child care and elderly care services are necessary, given the fact that the ratios of two-income households and elderly people are high among residents of long-term public rental housing. As such, relevant facilities need to be built, considering that demand for after-school classes and libraries for youth is higher than that for apartment units to be sold. In the Suseo permanent rental housing complex in Seoul, the residents are actively engaged in chrysanthemum cultivation. When a sales channel is developed, such plant cultivation can serve as a program contributing to income creation beyond being a mere hobby.

Studies on public rental housing have found that demand for housing safety net services, including dwelling, jobs, childcare, education, health, and medical services, is high. Since it is difficult to offer all these facilities and programs in public rental housing complexes, complexes should ideally be specialized. Childcare facilities and programs should be offered in complexes with many children. Facilities and programs for elderly people need to be provided specifically to those complexes with many elderly people. Furthermore, movement between public rental homes needs to be facilitated. This way, a resident can choose to live in a housing complex where specifically needed facilities and programs are offered.

For the housing safety net to be effective, various factors including specific programs and job opportunities should function comprehensively. When there is no income generation, even if homes are provided, asset accumulation becomes impossible. When there is no educational support, it is difficult for children to overcome poverty. Consequently, considerations of all these need to be included in the Act to Support the Quality of Life of Long-term Rental Housing Residents.

When the act is revised to enable public rental housing residents to move freely between housing complexes, overall satisfaction and residential suitability can be enhanced, and more effective operations can occur. To date, the main purpose of the relevant policy has been to increase the public rental housing inventory ratio with an emphasis on providing the rental housing. Now is the time to seek measures to properly manage rental housing as well.

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INTERNATIONAL COLLABORATION

2011 U-City World Forum Shedding Light on a Sustainable Green City

The 2011 U-City World Forum (UWF) was held October 13-14, 2011, in the port city of Incheon, hosted by the Ministry of Land, Transport and Maritime Affairs (MLTM) and sponsored by KRIHS. The forum sought to establish a global network and cooperation for a vision of city development.

Under the theme of "U-city for sustainable green city development and city regeneration," the event brought together government officials from overseas local governments that are pushing forward with U-city projects, U-city experts from research institutions, and private companies across the world, to establish an international forum.

This year's forum was also significant, as it introduced Korea's U-city project and U-City World Forum to nearly 4,000 institutions around the world with the support of domestic local governments and the European Union Chamber of Commerce in Korea (EUCCK).

The two-day forum included an inaugural assembly, conference, and business meetings. In the conference, KRIHS invited experts, including Dr. Marc Wolfram from IOER and Michael R. Linfield from The Philippines. They led the discussion on major problems encountered in developing smart cities and new strategies for globalizing the concept of 'smart city.'

The APMCHUD Seeks Cooperation in the Housing Finance Sector

The 3rd Meeting of the 3rd Bureau of APMCHUD (Asia Pacific Ministerial Conference on Housing and Urban Development) was held in Seoul, Korea on October, 28, 2011. All eight member countries, including Indonesia, Iran, India, Iraq, Fiji, Jordan, Korea and Pakistan, attended to assess progress on the agenda selected in the 2nd Meeting of the 3rd Bureau held in Nairobi, Kenya. On behalf of the Korea delegation, Dr. Kang Mi-na submitted a report titled "The Evolution of Housing Finance System in Korea" and made a presentation on the history of Korea's housing and housing finance policy. The conference helped to raise Korea's profile and strengthen international cooperation in the housing finance sector.

Workshop on National Base Map, Map Symbol Standards, and a Master Plan for the NSDI in Cambodia

The National Infrastructure & GIS Research Division of KRIHS held a workshop on Cambodia's National Base Map, Map Symbol Standards, and Master Plan for the NSDI on October 19, 2011, in Phnom Penh, Cambodia. The two- day event, attended by approximately 70 Cambodian government officials, was designed to report on the progress made on a KOICA (the Korea International Cooperation Agency) commissioned project to build

Cambodia's national base map and establish a master plan for national spatial information and gather opinions on the results.

On the first day, the report on the established Cambodian National Base Map was released and its outcome demonstrated for the participants. Dr. Shin Dong-bin introduced the Cambodian maps and diagrams, approved by the Ministry of Land Management, Urban Planning and Construction of Cambodia on September 21, 2011, and collected opinions from relevant Cambodian government officials in the transportation and environment sectors. On the second day, Dr. Kim Kirl made a brief presentation on the overall Cambodian NSDI master plan. This workshop was well received by participants as both informative and educational.

GDPC Hosts Third Global Forum on Development and Cooperation

On November 2, 2011, the Global Development Partnership Center (GDPC), a KRIHS affiliate, hosted the Third Global Forum on Development and Cooperation. Seventeen participants attended, including members who had participated in the previous two forums and private business individuals.

In the forum, Mr. Koo Yun-cheol, Director of the Ministry of Strategy and Finance, delivered a presentation titled "An Exploration Strategy of Neo-Columbus for the Latin American Market," focusing on the growing importance of the Latin American market, that continent's promising investment areas and ways to make inroads into the market. The presentation was based on his three-year service with the Inter-American Development Bank (IDB).

Serving as a bridge between foreign trainees and persons from domestic private companies, the GDPC will continue to host a series of development forums with a view to providing an opportunity for all to share knowledge and promote mutual exchange. The 4th forum will be held to time with the 1st anniversary seminar for the GDPC.

ULI Vice President's Lecture on the Global and US Real Estate Market

On October 12, 2011, Dr. Uwe S. Brandes, Vice President of Initiatives at the Urban Land Institute (ULI) and advisor to Korea's Ministry of Land, Transport and Maritime Affairs (MLTM), gave a lecture titled "Prospects and Major Issues of the Global and US Real Estate Market."

In this event, Mr. Brandes first introduced ULI and discussed the Global and US Real Estate Market from the viewpoints of privatization, response to climate change, and the global economy. Attended by 12

participants, including Dr. Sakong Ho-sang, Director of the GDPC, the ensuing Q&A session focused on the characteristics of ULI as a body cooperating with the World Bank and ULI's multi-sector strategy to deal with climate change.

ULI is a nonprofit research and education organization supported by members in 95 countries worldwide. It represents the entire spectrum of land use and real estate development disciplines' working in private enterprise and public service efforts.

The KRIHS-TCPA UCL Joint Seminar on the Transit-Oriented Corridor for the Green City

The seminar on Transit-Oriented Corridor for the Green City was held on October 24-25, 2011 in London. It was jointly organized by KRIHS, the Town and Country Planning Association (TCPA), a planning and environment body in the UK, and University College London (UCL). The seminar was attended by researchers and professors from the TCPA, the UCL, and KRIHS, including Dr. Chung Jin-kyu and Seo Min-ho. Dr. Chung introduced KRIHS and the Global Development Partnership Center (GDPC) and discussed ways to promote joint cooperation research between the three institutions on realizing Green cities and Seo presented the concept and effects of establishing a public transportation corridor when creating Green cities. Michael Chang from the TCPA introduced the institution and presented cases of building transit-oriented corridor in Europe and their implications.

Early this year, KRIHS and the TCPA conducted joint research on building a public transportation corridor to realize the Green City and plans to further promote their research cooperation in the Green City and public transportation sectors. KRIHS will seek a joint research with the UCL, with which KRIHS signed an MOU on finding polices for urban and transportation projects and overseas' city development efforts

Chief Demographer of SCAG Discusses Regional Planning of the US

On September 20, 2011, Dr. Choi Seong-youn, Chief Demographer of the Southern California Association of Governments (SCAG) was invited to discuss "Policies and Trends of Linkage and Cooperation between Regions of the US." Dr. Choi made a presentation on SCGA's role, its process of consultation, and cooperation practices, and explained the process of US regional planning, which involves a long period of consultation based on trust between regions. It presented important implications for Korea's regional policy.

SCAG is a metropolitan planning organization in Southern California, representing 6 counties, 191 cities and more than 18 million residents. SCAG undertakes a variety of planning and policy initiatives to encourage a more sustainable Southern California.

NEWS & ANNOUNCEMENTS

The Fourth 2011 Digital National Territory Expo Held

The Fourth 2011 Digital National Territory Expo kicked off on October 26, 2011. The four-day event, one of the Korea's largest gatherings for the spatial information sector, was hosted by the Ministry of Land, Transport and Maritime Affairs (MLTM) and jointly organized by KRIHS, the Korea Cadastral Survey Corp (KCSC), the Korea Land and Housing Corporation (LH), and the Korea Association of Surveying & Mapping (KASM). The global-scale event was joined by big- name IT corporations, SKT, KT, DAUM and Samsung SDS, SK, C&C, to name a few, and also 100 relevant government departments, local governments, companies, universities and research institutions. This year the expo was held together with the inaugural assembly of the United Nations Forum on Global Geospatial Information Management (UN-GGIM) and a leadership meeting of the Open Geospatial Consortium (OGC), attracting further global attention.

At the opening ceremony on October 26, 2011, close to 1000 high- ranking government officials and members of the National Assembly attended, including Prime Minister Kim Hwang-sik; the Vice Minister of MLTM, Han Man-hee; and KRIHS President, Park Yang-ho. In his keynote speech, Mark E. Reichardt, Chairman of OGC, highlighted the influence of spatial information, its application practices, and its future direction on a global level.

On the sidelines of EXPO, the 15th international seminar on OGC Korea Interoperability Day was held on October 27, 2011, jointly by KRIHS and the Korea Institute of Construction Technology (KICT) to discuss measures to seek global cooperation n realizing a global spatial information society. The seminar featured presentations by seven experts from Korea, Italia, Canada, Japan, Taiwan, and Vietnam. Another international seminar held on the same day with the theme of "National and Regional Perspectives on SDI Policy," was jointly organized by KRIHS and the Open Geospatial Consortium (OGC). This event aimed to share the best practices conducted in America, Asia, and global organizations and discuss measures to boost cooperation.

On October 28, 2011, a seminar titled "Services Utilizing Spatial Information" was held to target the general public and promote the establishment of a system of trade areas analysis and its application practices and raise awareness of the application potential of spatial information.

In the expo, KRIHS showcased the Korea Planning Support System (KOPSS) and the Land Use Regulation Information System (LURIS) at its booth. KOPSS is a computer tool used to support sustainable development, Green growth, participatory urban planning and the transparent planning process. LURIS was exhibited along with the Urban Planning Information System (UPIS) and the Architectural Information System (AIS) to help visitors understand the complete process from land use regulation to urban planning and building.

Seminar on Preparedness for the Age of Centenarians Launched

In a KRIHS professional seminar held on September 30, 2011, Dr. Kim Eun-jung gave a presentation on the "Directions and Future Tasks of Urban and National Territorial Policies in Preparation for the Age of Centenarians," which were mainly focused on urban, housing, and transportation sectors. The seminar was meaningful in that it offered an opportunity to examine the policies to be implemented in the national territory and urban sectors in preparation for the age of centenarians and also collect a wide range of opinions to reach a

consensus on drawing up related policy tasks. Moderated by Dr. Sohn Kyung-hwan, Vice-President of KRIHS, the discussion session was attended by relevant government officials, professors, and experts from the Ministry of Land, Transport and Maritime Affairs (MLTM), the daily newspaper Dong-Ah Ilbo, universities including the University of Seoul, KRIHS and the Land and Housing Institute (LHI).

Federal Chamber of German Architects Seeks Cooperation with Korea

On October 26, 2011, the Federal Chamber of German Architects visited the Architecture & Urban Research Institute (AURI) to discuss ways to cooperate with Korean experts and organizations dedicated to construction and urban planning. In a discussion meeting, the visited members of the institute including Tobias Jortzick, CEO of Marina Stankovic Architekten BDA discussed Germany's territorial development systems, its environment friendly integrated designs, and ways to regenerate and preserve cities or historic monuments. The meeting served as a good opportunity to share the experience of German experts in the construction, urban design and landscaping sectors, setting forth a clear future direction for Korea's urban architecture.

The KRIHS 33rd Anniversary Logo Unveiled

On October 4, 2011, KRIHS in celebration of its 33rd anniversary, unveiled its logo, symbolizing KRIHS taking a giant leap forward and creating a new path toward the future. KRIHS has contributed to balanced development of the national territory and improving the quality of life since its inception in 1978. It has implemented government policies through conducting approximately 2,000 researches. In a ceremony commemorating its 33rd anniversary, KRIHS pledged itself again to becoming an excellent state-funded institution and leading national territory development policy in the G20 era.

KRIHS' 33rd anniversary
33rd
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KRIHS GAZETTE December, Vol. 46

Korea Research Institute for Human Settlements (KRIHS) is committed to improving knowledge and understanding of the conditions and problems of the nation's resources and their interactions with people. It assists the government in formulating long-range development plans and makes policy recommendations on related matters.

KRIHS carries out various activities to collaborate with the international research community in solving theoretical and practical problems concerning human settlement issues and planning. Also, it provides research expertise and consulting services along with training programs for foreign governments and institutions.

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