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Neo Silkroad to Link Transport Network of Korea to Continent

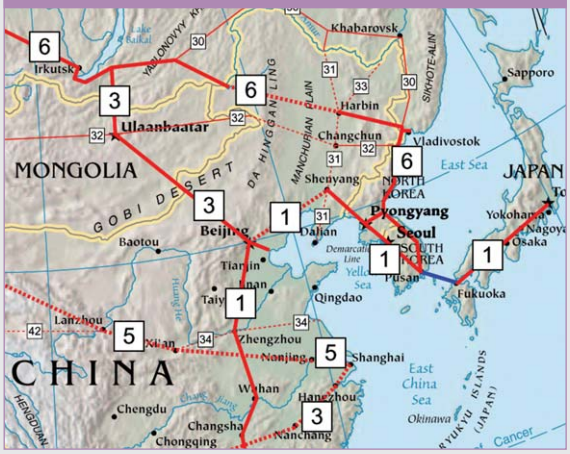
Recently, on his trip to Russia, President Lee Myungbak stressed bilateral economic cooperation between Korea and Russia by means of the three tracks of Neo Silkroad to connect Korea to the Asian Continent, including the Iron Silkroad, which links railways across the Korean Peninsula to railways across Siberia. The conception of the Neo Silkroad, which is intended to promote inter-regional economic development and exchange by strengthening linkage and collaboration in the Northeast Asian region, dates back to the initiative of the Asian Highway and the Trans-Asian Railway.

Past and Present of Asian Highway

The Asian Highway was initiated by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) - formerly, UNECAFE - in 1958, with the intent to construct a road network to inter-connect major industrial, commercial and historical cities and intensive trip generation regions across the Asian Continent, and promote economic and social exchange among Asian countries, which will ultimately contribute to the income growth of member countries.

In 1992, with the initiation of the Asian Land Transport Infrastructure Development project (ALTID), which was designed to develop overall land transport facilities of countries in Asia, the Asian Highway project was strengthened as a major part of the ALTID. In December 1993, a new Asian Highway plan was announced involving 29 routes across 18 countries, with a total length of 68,891km. Later, routes and sections were newly added to the plan over several years: 13 routes of 21,000km from Central Asia and the South Caucasus area in 1996, the Turkish section of 3,200km in 1999, the Northeast Asian corridor of 40,000km (China, Kazakhstan, Mongolia, Russia and the Korean Peninsula) in 2001 under the ALTID, and the Tokyo-Fukuoka section, Japan of 1,111km

Highway Network Linkage (AH)



Railway Network Linkage (TAR)

in 2003. As of 2008, the Asian Highway remains under promotion, involving a total of 32 countries and amounting to 141,236km in total length.

To date, funds designated for the construction and improvement of the Asian Highway amount to $26 billion. UNESCAP is currently putting its first priority on the securing of funds from international financial institutions including the World Bank, the ADB, and banks from the EU, Middle East and Japan, in order to fully promote the Asian Highway. Most recently, the plan for the Asian Highway is focusing on the feasibility study on the improvement of the underdeveloped sections, and investment in the improvement of the routes categorized as Class III and below, through bilateral or multilateral collaborative systems among member countries.

Past and Present of Trans-Asian Railway

The plan for the Trans-Asian Railway (TAR) started with the pre-feasibility study on the conditions of the 14,000km railway linking Singapore to Istanbul by UNESCAP in the early 1960's, with a view to connecting Asia, Europe and Africa. However, on the occasion of the confirmation of the ALTID at the general assembly of the fourth UNESCAP in Beijing in April 1992, the TAR promotion fully resumed. The TAR went into effect as a multilateral international treaty in November 2006 as the 'Inter-governmental TAR Treaty' to connect 28 countries across the Asian Continent concluded at the UNESCAP transportation ministerial meeting held in Busan, Korea.

Considering the interests of the countries involved, UNESCAP has categorized the planning areas into four regions: Southeast Asia, Northeast Asia, Central Asia and the Caucasus, and South Asia, Iran and Turkey. Currently, UNESCAP is promoting the TAR according to the four-staged promotion strategies as follows: TAR route designation, streamlining of the border crossing procedures, international treaty conclusion, and railway operation. As of 2008, the TAR length is 80,900km in total. The Northeast Asian region of China, South and North Korea, Mongolia and Russia is composed of a 32,000km railway network. The railways of China, and South and North Korea are standard tracks (1,435mm) while those of Russia and Mongolia are wide tracks (1,520mm), which makes it urgent to establish measures to link the different tracks together.

Prospect and Economic Effect

Currently, the overland connection has been blocked in Northeast Asia due to the geopolitical variable of North Korea. In the future, once the roads of North Korea are open, the Asian Highway (AH) route one from Tokyo, Japan can be connected to China and Russia through Fukuoka - ferries - to Busan, and to Munsan (AH1) and Ganseong (AH6) of South Korea to Sinuiju (AH1) and Wonjeong (AH6) of North Korea. However, preferably, it is necessary to improve the road alignment of North Korea along with the unpaved section from Anju to Sinuiju.

Once the Trans-Korean peninsula Railway (TKR) connecting South and North Korea is built, it can be linked to the Trans-Siberian Railway (TSR) and the Trans-China Railway (TCR). If this is realized, the railway system is expected to greatly contribute to people exchanging and the connection of resources, regions and technologies, as well as economic cooperation between the South and the North, and among Northeast Asian countries. As for the railway connection, however, again, the variables are related to North Korea; the deteriorated North Korean section - bridges, sleepers and rails are in poor condition - and the different signaling and communication system between the two Koreas. In terms of the linkage of the land railway network in Northeast Asia, South and North Korea and Russia agreed on the TKR restoration at the tri-lateral meeting in Vladivostok in March 2006.

If the linkage of the road network between the South and the North is expanded, the transport costs from Seoul to Pyeongyang are predicted to reduce to 62.8% ($68.8/ ton), and the transport time to 16% (8 hours), compared to maritime transport. If the convenience of road transport is taken into account, the secondary benefits are expected to grow further. In addition, according to the TAR plan, once the TKR is linked to the continental railway network, the costs are expected to fall by 25 to 35% with the transport period reduced by 13 to 16 days, compared to maritime transport to Europe.

To be specific, currently, the average unit cost of maritime transport between Incheon and Nampo is $800/ TEU. The average unit cost of maritime transport between the two Koreas is $0.18/ ton km, lower than that of road transport, or $0.31/ ton km. However, the total unit cost of land transport is estimated to be much lower, considering that land transport does not need trans-shipment, and that the transport time significantly reduces. Currently, it takes 38 to 40 days to maritime-transport containers between Busan and Berlin, Europe, costing $1,900/ TEU. However, once the TKR is linked to the TSR or the TCR-TMGR (Trans-Mongolian Railway), and the containers can be transported over land, the transport time is estimated to reduce by 19 days maximum and the costs by $620/ TEU. In addition, if the TKR-TSR linkage - Busan, Najin, Vladivostok and Berlin - is utilized, the time can be reduced by 16 days maximum, and the costs by $500/ TEU.

Tasks Ahead

In order to link the land transport network of the Korean Peninsula to that of the Asian Continent, first, it is necessary to strengthen multi-lateral cooperation to improve roads and railways of North Korea. The roads and railways have deteriorated with a lack of timely investment and maintenance, with the transport efficiency remaining low. This makes it necessary to make a large investment to link them to the Asian land transport network. However, South Korea alone cannot provide the financial resources required for the improvement of land infrastructure of North Korea, and therefore, a strategic approach is required.

In this sense, it is essential to continue the inter-Korean dialogue to induce agreement and participation by North Korea in the continental transport network linkage, properly use the influence of Russia and China on the North, and develop elaborate strategies to take advantage of the double structure of ‘collaboration and competition’ inherent in the regionalism of Northeast Asia to achieve our national strategies. Ultimately, it is necessary to establish the tentatively named ‘Northeast Asian Development Bank’ in the framework of multi-lateral collaboration, based on the participation of the stakeholder countries in the Korean Peninsula. Through this, it is necessary to promote the activation of private participation based on project financing.

In the meantime, it is required to prepare an internal response system to strengthen Korea’s position in the ‘competition on the Korean Peninsula,’ which will arise in the process of national strategies promotion and policy directions transformation by countries involved including Russia and China. To this end, first, it is important to establish a promotion system to actively implement the land transport network operation to be linked to the continent, as well as to North Korea. Coupled with this, it is necessary to solidify international cooperation in order to build a system to swiftly collect, compile and analyze transport logistics and policies of concerned countries, which are in fierce competition with each other, so as to prepare response measures.

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Evaluation of Spatial Plans in Response to Climate Change

Recently, climate change has increasingly made its presence felt in daily life. Aimed at bracing for climate change in the field of territorial and urban development, the study, 'Evaluation of Spatial Plans in Response to Climate Change and Future Tasks' has been carried out to assess existing spatial plans and come up with future tasks against climate change. The major contents of the study include analysis of the nation's territorial conditions for climate change response - conditions for climate change impact accommodation, response to disasters and territorial plan establishment. Also, the contents include evaluation of the nation's territorial plans in terms of climate change, and review of trends in climate change response at home and abroad. Based on the analysis, the study presents future tasks against climate change in the field of territorial and urban development, along with policy suggestions.

Current Status

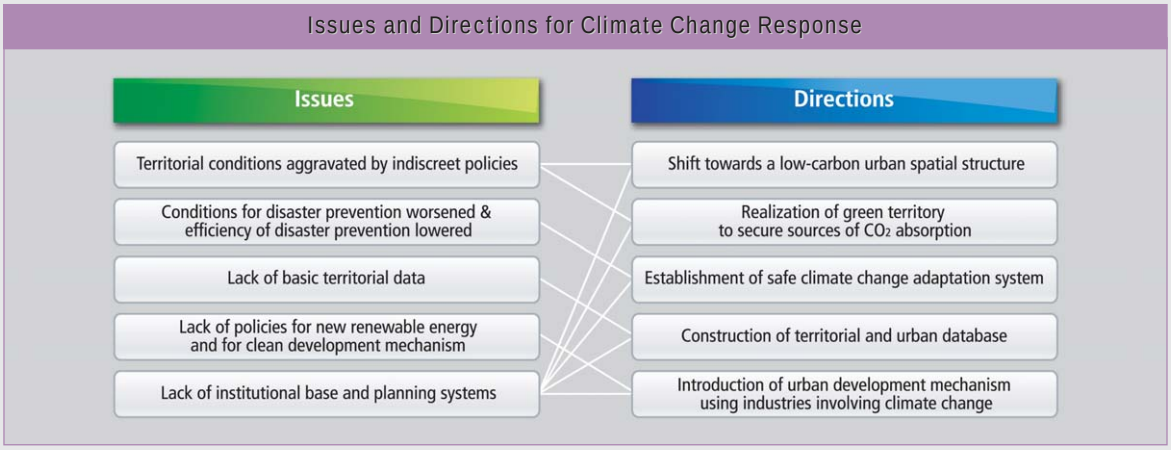
The impact of climate change has been increasingly felt around the world in recent years. For instance, over the past decade (1996~2005), globally, the surface temperature rose by 0.74℃, causing changes in the sea level. In response to this, internationally, the World Meteorological Organization and the United Nations Environment Program have installed the Intergovernmental Panel on Climate Change to cope with climate change. The nation is responding to climate change through the Climate Change Commission chaired by the Prime Minister. However, it is regarded that there is a lacking in preliminary studies, and consistent response policies and guidelines in the field of territorial and urban development.

Regarding territorial conditions for climate change response, according to the analysis on the conditions for the accommodation of climate change impact, the phenomenon of urban heat islands are deepening as urbanization advances. Also, the territory has been formulated to produce much significant CO_2 emissions, causing excessive energy consumption. To address these problems, different strategies and policies are required for different regions according to their conditions. In addition, it is necessary to change the methods of managing urban parks and urban forest so as to secure sources of CO_2 absorption.

According to the study on disaster-related territorial conditions, the frequency of localized heavy rainfall has increased. The average sea level is consistently rising. The low investment in disaster prevention has been also found to be problematic. Regarding the conditions for territorial plan establishment, the review on the climate change impact and vulnerability was impossible itself due to lack of basic data. For climate change mitigation and adaptation, response measures of the water resources area are specific while efforts are insufficient in general in the areas of agriculture, forestry, public health and health care.

Climate Change Response Overseas

According to the results of the case study on climate change response by the EU, Germany, the U. K. and Japan, the EU has put in place a standardized policy program to establish an inter-governmental collaborative system. Germany has in place a climate change response system with the federal, state and local governments in close relationship with each other. In addition, Germany presents diverse implementation programs for local governments to adopt in accordance to the regional conditions. The U. K. is operating comprehensive policies and programs of diverse levels. Through the basis of the Planning Policy Statement and the Planning Policy Guidelines, the U. K. provides regional spatial strategies and guidelines for specific response measures within the Local Development Framework. Japan has established the public climate change response system under decree. Under the Framework Act on Climate Change, Japan has set up the Center for Global Warming Prevention and is promoting active participation by local governments.



Issues and Directions

Based on the above reviews, the study has analyzed related issues in the field of territorial and urban development to draw future tasks against climate change. With low-carbon green territory and safe territory as the key words, the future tasks for climate change response have been analyzed as follows: first, it is necessary to transform into a low-carbon urban spatial structure. The detailed tasks are to designate and support pilot carbon-neutral cities, establish urban plans for the formulation of low-carbon cities, and develop eco-friendly New Towns producing less carbon. Secondly, a green territory to secure sources of CO_2 absorption must be realized. The detailed tasks are to secure green and water-friendly spaces upon urban development, and systematically manage forests.

Third, the establishment of a climate change system for a safe territory is imperative. The detailed tasks are to assess the vulnerability of the territory to climate change, construct the adaptation system, and strengthen disaster prevention capacities of facilities in preparation for strange weather patterns following climate change. Fourth, a climate change system for a safe territory must be built. The detailed tasks are to deal with disasters on the basis of urban planning, prepare a system for safe evacuation, build a standing monitoring system for disaster control, and strengthen preemptive disaster prevention systems.

Fifth, the territorial and urban database against climate change must be secured. The detailed tasks are to calculate greenhouse gas emissions by region and analyze potential emissions reduction, compile the national energy climate map and review whether to introduce the regional goals of emissions reduction. Lastly, the urban development mechanism using industries involving climate change should be introduced. The detailed tasks are to improve laws and regulations for expansion of new and renewable energy, review on the feasibility of adopting new and renewable energy across the territory, supply land for rental industrial complex exclusively for new and renewable energy industries, create the Eco-industrial Park, develop the Clean Development Mechanism (CDM) for the territorial and urban field, and, from a mid- to long-term perspective, establish a response system for the introduction of the carbon emission trade system among regions and cities.

The above response tasks need to be strategically promoted phase by phase over a short period by 2012 and a mid- and long-term period by 2012 and after. In addition, it is suggestible to form an exclusive organization involving the Ministry of Land, Transport and Maritime Affairs, and relevant research institutes, so as to formulate an effective response system and lead climate change response through pilot project promotion. Lastly, the policy suggestions presented in this study are as follows: to use climate change-related industries as new national growth engines, to strategically determine priority projects in preparation for the post-2012 regime, to strengthen public relations and put more emphasis on the role of the civic society, and to shift towards more public investment in prevention.

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Peaceful Use of Bukhan River Basin: Towards Active Inter-Korean Exchange and Collaboration

Since the construction of the Imnam Dam, or Mt. Geumgang Dam, in the upper Bukhan River, problems have been raised with the common use of water resources of the shared river. However, currently there does not exist sufficient institutional tools to solve the problem, or to promote joint projects to establish peace in the Bukhan River basin among South and North Korea, and the United Nations Command. The construction of the Imnam Dam by North Korea in 1986, has blocked water flow southwards and significantly degraded the ecosystem of the Bukhan River basin. In addition, dam construction has been deterring power generation by dams in the lower Bukhan. Despite this, no fundamental measures have been put in place yet to protect the ecosystem or to secure water resources. To be specific, the Imnam Dam changes the water course to another drainage basin so that North Korea's Anbyeon Chungnyeon Power Plant along the Bukhan River water system can generate power. Consequently, water flow to the Bukhan River has significantly dropped, causing changes in the ecosystem, creating water contamination, and impeding power generation.

Need for Peaceful Use of Bukhan River Basin

As the possibility of conflicts grows over water use in the shared river between the two Koreas following the Imnam Dam construction, it is increasingly necessary to establish fundamental measures of addressing the issue. In other words, measures to link and peacefully use the Imnam Dam of the North to the Dam of Peace of the South are expected to contribute to the alleviation of militaristic tension and promotion of peace in the area. In addition, the inter-Korean border region, a vast amount of land designated as a military operation area, has been currently left idle. Therefore, the land use efficiency in this region needs to be enhanced by using - jointly between the South and the North - the water and land resources, along with the eco-resources of the Bukhan River basin, which is situated in the central part of the Korean Peninsula.

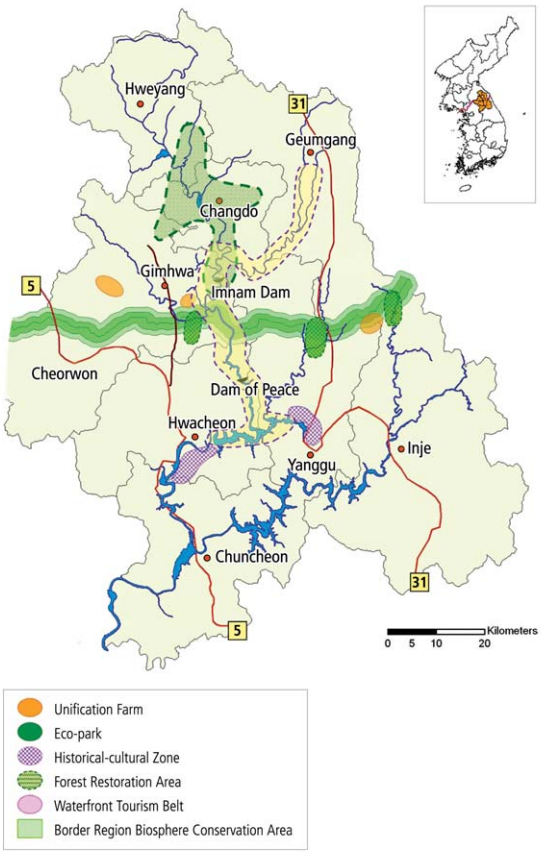
Another reason to peacefully use the Bukhan River basin is to activate inter-Korean exchange and cooperation. To be specific, the joint use of water resources, development of tourism resources, joint prevention of disasters, conservation and management of the natural environment and electricity production in the Bukhan River basin can contribute to the revitalization of exchange and collaboration between the two Koreas. Lastly, it is necessary to develop the river basin in order to address the inconvenient living environment and underdevelopment in this region, which has aggravated with the blockage of the border region following the division of Korea.

Directions

In order to develop the Bukhan River basin and establish peace in this region, it is necessary to systematically prepare and institutionally support joint water use and other collaborative projects. The directions to the peaceful use of the Bukhan River basin can be detailed as follows: preparation of institutional tools by the two Koreas for the use of the shared rivers so as to jointly use the water resources, establishment of joint measures for disaster prevention and for joint handling of floods and damage from cold weather, planning for preservation and provision of support systems for systematic management of the eco-system, fundamental prevention of disasters through forestations in the Bukhan River basin, promotion of projects of joint exploration for historical remains preservation and restoration, planning for eco-friendly and sustainable use to enhance efficiency of territorial use, linkage of collaboration at the public level to that of the private level phase by phase in terms of main bodies for collaboration and collaborative projects.

As for the selection of collaborative projects, the following detailed criteria can be applied for project assessment: pending issues that both Koreas should jointly deal with preferentially, economic benefits through bilateral collaboration by the two Koreas,

Cooperation Projects in Bukhan River Basin



preservation of major eco-resources and cultural and historical resources, possibility of project participation by North Korea, and effect on exchange, collaboration and peace establishment. The possible projects can be suggested as follows: joint use of water resources of the Imnam Dam and the Dam of Peace along with electricity cooperation, joint study on the eco-system and creation of eco-parks, designation of areas for biosphere conservation in the border region, forestation in the Bukhan River basin, expansion of pilot farms and farming infrastructure, restoration of discontinued transport networks, promotion of a waterfront tourism belt to link to inland tourism, and joint exploration of cultural and historical remains.

Promotion Strategies

The suggested promotion stages for the inter-Korean collaborative projects, which are intended for a peaceful use of the Bukhan River basin are, first, 'Peace Belt Preparation,' second, 'Peace Belt Formulation,' and lastly, 'Peace Belt Completion.' To be specific, during the Peace Belt Preparation period, North Korea promotes the opening-up policy and inter-Korean cooperation take place in a limited manner. Secondly, during the Peace Belt Formulation period, North Korea expands its opening-up policy, and as inter-Korean exchange is revitalized, collaboration between the two Koreas begins to take root. And lastly, during the Peace Belt Completion period, inter-Korean economic exchange and cooperation takes place without obstruction in the lead-up to the political reunification.

The following are the major collaborative projects suggested for each stage of the promotion for a peaceful use of the Bukhan River basin;

• **Peace Belt Preparation Stage:** Promotion of peaceful use of the Imnam Dam and the Dam of Peace, joint study on major eco-resources, promotion of the UNESCO designation of the border region as a biosphere conservation area, preparation of collaborative measures for disaster prevention in the border region, forestation in the Bukhan River basin, and expansion of pilot farms and farming infrastructure.

• **Peace Belt Formulation Stage:** Preparation of measures to link and use the Imnam Dam and the Dam of Peace, restoration of transport networks, joint use and utilization of the eco-resources of the neighboring border region for tourism, joint exploration of the cultural and historical resources, and creation of a tourism belt along the waterfront of the Bukhan River basin.

• **Peace Belt Completion Stage:** Turning of the Bukhan River basin into the Peace Zone targeting Peace Belt establishment in the border region, and creation of a tourism belt in the central eastern inland linking the Peace Belt to the Special Tourism Zone in Mt. Geumgang of the North and Mt. Surak of the South.

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Policy for Improving Real Estate Market Transparency of Korea

Currently, real estate market transparency of Korea is gradually increasing. For example, the real estate transparency index of Korea by the *Jones Lang Lasalle* has continued to improve since 2004, and a recent KRIHS study shows similar results: the transparency index rose to 3.78 in 2008 from 2.04 in 2004 (out of a full mark of 5 points). However, externally, Korea's real estate market is classified as semi-transparent, and considering the scale of the economy, regarded as low on transparency. The reason is that, the market transparency still has room for improvement from foreign perspectives, and externally, efforts have not been enough to make the world know about policies for real estate transparency improvement of Korea. In this regard, it is necessary to make known the three most important policy efforts to enhance real estate transparency of Korea as follows: to build statistics on actual transaction prices in the real estate market, to provide data on the office market, and to readjust to a real level the standard for imposing property tax.

Statistics on Actual Transaction Prices

In Korea, it has been compulsory to report on the actual real estate transaction price since 2006. That is, upon transaction, the party concerned or the real estate agent should report on the actual transaction price of the property concerned to the authority. With the introduction of the law, the behavior to report on a price lower than the actual transaction price for tax evasion has been rooted out.

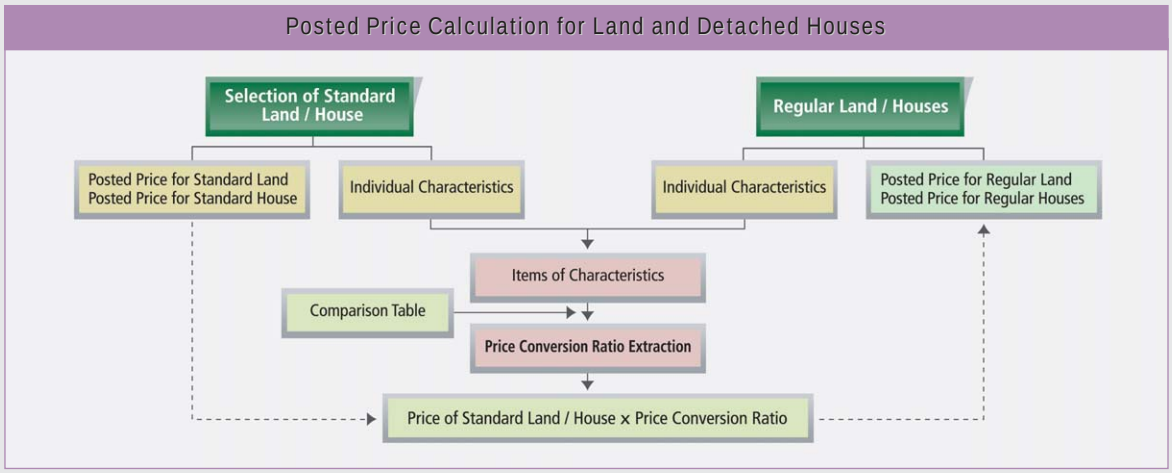
To effectively implement the compulsory report on the actual transaction price, the Real estate Transaction Management System (RTMS) has been established (http://rtms.mltm.go.kr). The RTMS not only allows the report on the actual transaction price via the Internet, but assesses whether the reported price is acceptable to the market as actual transaction price. In addition, thanks to the system, it has become possible to interactively use real estate-related data for a variety of purposes. For instance, the system helps to share transaction price assessment results with administrative organizations including the National Tax Service. Coupled with this, every month, the system releases the updated actual transaction prices of apartment houses via the Internet.

With the introduction of the actual transaction price reporting system and the establishment of the RTMS, it has become possible to secure data on actual property transaction prices. The Ministry of Land, Transport and Maritime Affairs (MLTM) is currently endeavoring to create actual transaction price indices based on the data. Previously, for official statistics on real estate prices, the ministry used the price indices based on a sample survey. The actual transaction price indices, along with existing statistics, can be used as useful indices for examining and diagnosing trends in the real estate market. In the future, the use of the statistics is expected to consistently increase. For example, it can be used to calculate posted prices required to compute the standard for property tax imposition.

Data on Office Market

In foreign countries, data on the office market is being compiled and released primarily by the private sector. Domestically, businesses in the private sector including the Kyobo Realco (http://www.kyoborealco.com), the R2Korea (http://www.r2korea.co.kr), and the Sams (http://www.samsnet.co.kr) periodically examine and release data on the office market including rent by region and vacancy rate. However, it is not sufficient enough to be used for official statistics. Accordingly, the government has been implementing the survey of rent and estimation on the yields on office and retail buildings since 2003. Currently, this project is being implemented semi-annually, with appraisers dropping off at the office buildings and directly gathering required information such as basic building information, vacancy rate and rental status, operating expenses, asset values, etc.

The target of this project is office buildings of six stories or more, and retail buildings of three stories



or more in seven metropolitan cities including Seoul, Busan and Daegu: the 1,500 buildings with the space for rent accounting for more than 50%. The survey items total 250 in number, which include building status, total building area, area by floor, rent by floor, operational expenses, mortgage information and appraisal.

The yields on building investment are calculated based on the profit data including rent and other profits, data on operational expenses, and data on investment capital. The results are categorized by district, building age and building size, and made available. In addition to rent and vacancy rate, operational income, operational profits, efficiency ratio by building floor and other diverse data are produced and made available in the form of a book. With this, it is considered that, the problem of lack of information on commercial properties has been considerably resolved.

Standard for Property Tax Imposition

In order to enhance real estate market transparency, it is necessary to secure impartiality in real estate tax imposition. To achieve this, the posted price, or the standard for tax imposition, should well reflect the market value. To effectively manage the posted price, the government has integrated the multiple management bodies including the National Tax Service, the MLTM, and local governments into one to the MLTM since 2006. For impartial tax imposition based on the market value, the Housing Price Posting System was newly introduced in 2005, under which both land and the building are assessed together. In the future, the government plans to introduce the price posting system for non-residential buildings including office buildings as well.

The posted real estate prices of Korea can be divided into posted prices for land and posted housing prices. Again, posted housing prices are categorized into prices for detached houses and for apartment houses including apartment buildings and terraced houses. For land and detached houses, the standard land or the standard house is created for a 500,000 km^2-land and 200,000 km^2-houses respectively. Appraisers survey the prices and individual characteristics of the standard land and standard house.

Based on the results, the Comparison Table is created, which is a standard comparison table drawn up based on the factors in formulating the prices of standard land [house] and regular land [houses]. To be specific, the Comparison Table is compiled by re-organizing into a matrix the conversion ratio of each characteristic of the land [detached houses], which have been drawn from the multiple regression analysis on individual characteristics of the standard land [house]. The posted price of regular land and detached houses is computed using the Comparison Table. In the meantime, the complete survey system has been put in place for the calculation of the posted price for apartment houses. In addition to this direct survey, a method of assessing the market value by using the reported actual transaction prices is being currently reviewed.

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Establishment of Spaceborne Monitoring System for Effective Land Management

Issues in Spaceborne Monitoring

Various measures of effectively using and managing limited territorial resources are being integrated into rapidly growing information technology and consistently promoted in various fields. Spaceborne monitoring refers to a series of procedures of detection, tracking and prediction of changes in land. In particular, it is possible to effectively manage land using a variety of data acquired by means of diverse sensors loaded on spaceborne platforms (artificial satellites, air crafts, etc.). While spaceborne monitoring data including satellite images are useful in monitoring land, it is too costly to obtain, and the procedures for data purchase is complicated. In order to acquire satellite images, it is necessary to go through the entire procedures of ordering, assessment, data processing and sales; in reality, it takes a minimum of two to three months to assess and process the data. While the Korea Aerospace Research Institute has been selling the Arirang II, a high resolution satellite image, at a fifth the price of foreign satellite images since December 2007 to lower the purchase price, few people use it due to the complex purchase procedures and lack of public promotion.

Spaceborne monitoring data has a variety of space, spectrum, and time resolutions; therefore, the technology to converge these images is necessary. To be specific, technologies are required to integrate images with different degrees of resolution and extract data needed for land management with little cost and time. Monitoring for use and management of land should consistently take place in the air, on the ground and under the ground. Furthermore, it is necessary for the inter-linkage among them to smoothly take place. In addition, since monitoring is being separately promoted for each individual territorial field, it is necessary to consider an integrated linkage for different types of data acquired in different spaces. Monitoring through satellite images allows for the acquiring of spatial information according to the satellite cycle. This is problematic because it is difficult to swiftly respond to disasters. Therefore, research should be conducted on a real-time monitoring system which applies diverse technologies for acquiring real-time data using an unmanned aerial vehicle, for instance.

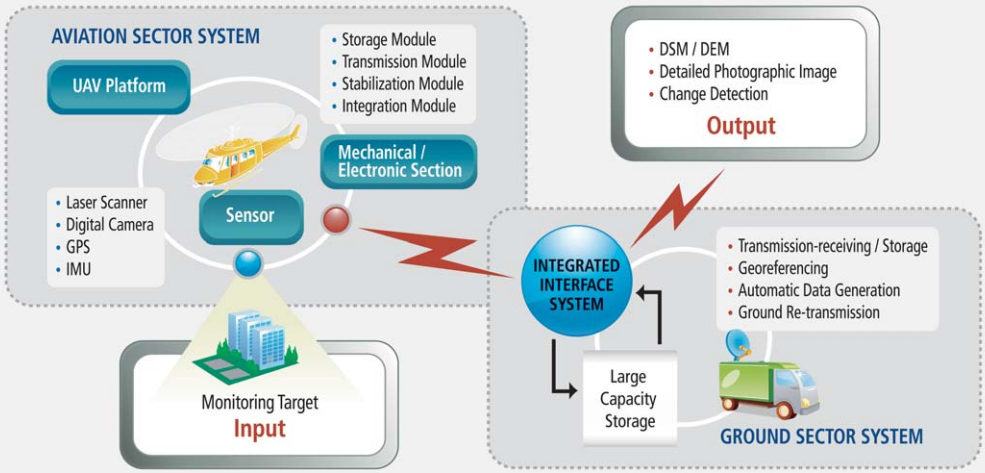
In order to effectively monitor land, it is important to use spaceborne monitoring data. However, the data has been scattered across different territorial fields, causing difficulties in obtaining. Therefore, it is necessary to explore methods of integrating and managing spaceborne monitoring data which different agencies presently purchase and separately manage. This way, the use can be promoted at the national level. In addition, many existing restrictions on spaceborne monitoring including aviation-related regulations should be consistently improved.

Spaceborne Monitoring System Establishment

In order to effectively establish the spaceborne monitoring system, it is necessary to set up a mid- to long-term plan at the national level. What must be included in the plan can be enumerated as follows: designation of an organization in full charge, training of professionals, data securing and distribution planning, plans for refurbishing related laws and regulations, application system development and planning of service provision. In addition, the spaceborne monitoring system should be built in a way that it can be linked to the monitoring systems for the ground and the underground sector so as to complete the territorial monitoring system of the nation.

A specialized organization to establish and operate the spaceborne monitoring system should be designated through discussions among the Ministry of Land, Transport and Maritime Affairs, the National Geographic Information Institute, and the Korea Aerospace Research Institute. Efforts are required to strengthen the role of this specialized institution. The specialized body must fully deal with the entire tasks of planning, data production,

Conceptual Map: Real-time Spaceborne Monitoring System



distribution, data analysis, development of related technologies and services, and feasibility assessment. The expertise of the organization members should be presupposed.

It is important to institutionalize the cultivation of professionals who will take charge of the monitoring-related projects - those that are being currently promoted in each individual territorial field -, develop related technologies, analyze and apply the acquired data. Measures should be provided for the professionals educated in specialized training institutions to learn new technologies and solidify expertise through re-training. Data sharing and a system for data distribution are necessary for effectively pushing for monitoring-related tasks, which are being separately promoted by each individual territorial field. It is desirable to use the existing National Geographic Information Clearinghouse (www.ngic.go.kr), or to complement and utilize satellite image-related systems currently run by the National Geographic Information Institute or the Korea Aerospace Research Institute, instead of building a new distribution system.

Also, it is necessary to prepare institutions for the establishment and operation of the spaceborne monitoring system, and to improve regulations in order to activate the establishment, distribution and application of spaceborne monitoring data. To this end, it is essential to improve security-related laws to correspond to reality in order to achieve industrial revitalization through swift data construction, distribution and utilization. The time for data processing should be minimized. Aviation-related regulations should be also improved for swift monitoring with manned and unmanned aerial vehicles.

In order to rapidly respond to diverse disasters, it is required to establish a real-time aerial monitoring system using unmanned aerial vehicles. For this, it is necessary to develop platforms and sensors to obtain images real-time, and a transmitter-receiver system to transmit the images to the ground, along with the analysis system. Also, it is necessary to select major monitoring targets and concentrate research. This is because monitoring is needed for areas with high demand such as changes in buildings in urban areas, changes in land cover including the territory of North Korea, land moisture of individual river basins, detailed topographic changes (river sites, river banks, sinking ground, land slides, coastal areas, etc.), muddy rivers, road changes, etc. Major monitoring technologies requiring R&D can be exemplified as follows: estimation of change in national base maps by map sheet, detection of changes with existing digital maps and new images, amalgamation of multiple sensors for change detection, digital maps upgrading, and mapping of areas affected by disasters (flooding, land slide, forest fire, etc.).

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Creation of New Territorial Values and Strategies for Green Growth*

The territory is where we live our lives. It reflects the society. The territory is transformed according to the trends in the age. Our lives assimilate with the transformed territory. Over the past five decades of economic growth, Korea has shifted from an agricultural society into an industrial society. Now, as the world is entering the 'age of environment and information,' the nation, endeavoring for a new take-off, intends to move forward under the flag of green growth. Accordingly, as the old saying, 'new wine in new bottles' goes, it is time to pursue new territorial values in line with green growth.

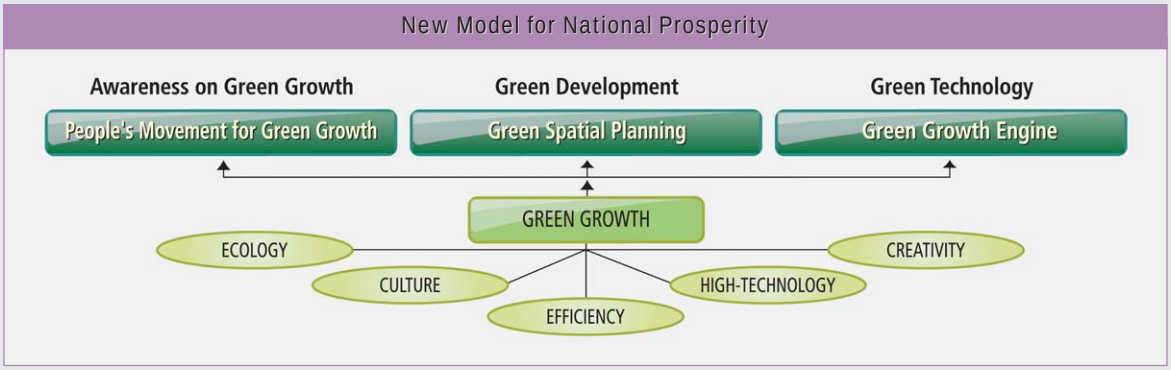
We wish to live in a decent territory with a beautiful, pleasant and safe living environment. We pursue co-prosperity among regions, and want our regions to have active regional culture. At the same time, we wish to further develop and live an affluent life. Furthermore, we want to pass on such territory to our future generation. These are the very reasons that we endeavor to create new territorial values and promote green growth.

Now, the paradigm is shifting from growth-oriented towards eco-oriented. That is, globally, countries are currently moving from the sole goal of economic growth towards an ecological society where people co-exist with nature. In order to create new territorial values, it is necessary to factor in the future image of the territory, and high-technology, people's awareness and future growth engine involving green growth, as well as the paradigm shift. In this sense, the new territorial values to prepare for green growth can be suggested as follows: ecology, culture, efficiency, high-technology and creativity. Ecology means considering affluence of nature and unique ecological characteristics of a region. Culture represents creating regional values on the basis of nature and human life. Efficiency means achieving economic feasibility while taking ecology into consideration. High-technology means providing conditions for the integration of cutting edge technology into space. And lastly, creativity means formulating a creative territory for better quality of life.

To create new territorial values and achieve green growth cannot be accomplished in a short period. This plan should be promoted consistently over a long period of time with correct directions and strategies. The ten selected strategies presented in the paper for the creation of new territorial values can be summarized as follows: i) strengthening of territorial capacity to brace for the Aging Society, ii) securing of new renewable energy sources in response to the predicted depletion of fossil fuels, iii) formulation of a beautiful territory by enhancing the landscape value of the territory, iv) establishment of a climate change adaptation program, v) securing of growth engine by re-creating regional values including regional culture, vi) formulation of future-oriented territorial space based on convergence of cutting edge technologies and informatization, vii) territorial management based on culture and environment, viii) territorial space formulation and management for social trust building, ix) transformation of the territorial management system for the integration of development and conservation, and x) establishment of future-oriented spatial plans for green growth and creation of new territorial values.

Green growth represents the end of growth supported by fossil fuels. Green growth intends to develop clean energy sources, on which to create a new growth engine, and materialize a low-carbon society. What is important is that green growth cannot be achieved with efforts of the industry and

* In commemoration of the 30th anniversary, KRIHS held the international symposium titled, 'Global Challenge and Territorial Strategies' on October 1. The symposium was organized with the intent to explore future directions to territorial policies of Korea amid global challenges including climate change. The article is the summary of the presentation by Dr Choi Yeongkook on the 3S strategies for green growth and creation of new territorial values.



high-technology alone. It can be achieved only when people become well aware of green growth and every part of their lives is set in line with green growth. To accomplish this, it is necessary to promote a new framework and policies for green territory. The paper presents the '3S System' of slow, small and soft, as the principle for the promotion of the ten territorial management strategies as follows:

First, in the future, territorial development should be 'slow.' 'Slow' here is a matter of direction and quality, not speed. These days, the trend of 'slow' is attracting people's attention. Living slow is intended to appreciate our lives. In terms of territory, bike-riding well exemplifies slow development. Bike-riding is a way of reducing greenhouse gas emissions. Also, it is a tool to find a new way of life to lead a comfortable life, which changes the pattern of our lives. In short, 'slow development' is the first step to change the development pattern pursued for physical growth so far by giving ourselves some leeway.

Second, territorial development in the future should be promoted in the way 'small' things are valued. 'Small-scale territorial management' is intended to free ourselves from maximized consumption and the trap of physical growth and development. For this, we need to change our consumption-oriented way of life. In other words, growth should be achieved while considering nature, through nature-friendly technology, by saving energy and by avoiding blind pursuit of science and technology. Green growth cannot be achieved with new energy, new technology and new industry alone. The key is the mindset of the people towards green growth. As taught in Buddhism, to gain less, and empty instead of fill our lives is regarded as the real ground for green growth.

Lastly, the future territorial management should carry on a 'soft' drive of promotion. It should avoid straight and standardized development, fixed organization and stereotyped approach to development. Instead, development should be promoted considering regional characteristics and resource properties. Policy promotion should be geared towards bilateral cooperation and co-existence. In addition, for spatial planning, while the future-oriented big picture and framework should be shared, detailed tools for implementation should be planned in consultation with local residents. To this end, plans should be linked to each other and drawn in a flexible manner. For instance, when setting up plans, instead of determining the use of land for the entire territory at a time, it is desirable to decide on the use for as much land as needed for the present, and leave the rest with future generations.

The main player in discovering new values of the territory is us, human beings. Therefore, the important thing is to have the will to change ourselves so as to create new territorial values. As a result, we will be able to lead a better life, and further, hand fruits of green growth down to our future generations. Green growth is the core strategy of the future to enhance territorial competitiveness. In other words, by creating new territorial values and achieving green growth, we will be able to formulate a new civilization and new culture, and enhance the country brand.

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NEWS & ANNOUNCEMENTS

Lecture on Netherlands Territorial Planning

An expert lecture was offered on Aug. 6 on the recent trends in territorial planning of the Netherlands, by Prof. Jusuck Koh of Dept. of Landscape Architecture, Wageningen Univ. of the Netherlands. In his lecture, Prof. Koh reviewed the characteristics and current issues in territorial planning of the Netherlands, upon which to suggest policy implications for Korea, including territorial countermeasures against climate change, energy management, multiple purposes and efficient land use, creation of productive green areas in urban outskirts and water supply.

13th Human Settlements Writing Contest

The yearly Human Settlements Writing Contest, co-hosted by KRIHS, the Korea National Housing Corporation, and the Hankook Children's Daily, was held from Aug. 25 to Sep. 30 among nationwide elementary school students. The event was held under the sponsorship of the Ministry of Land, Transport and Maritime Affairs, and the Ministry of Education, Science and Technology. A total of 3,415 participants entered the contest, which marked 13th anniversary this year. 'A Lesson from Little Creature' by Shim Mingyeong from Gyeseong Elementary School of Seoul was awarded with the Grand Prix. A total of 357 prizes were given to individual entries, along with prizes for instructors and group entries. The awards ceremony was held on Nov. 2 at KRIHS Hall.

30th Anniversary Celebration Event

On the occasion of the 30th anniversary in 2008, KRIHS held the anniversary celebration ceremony on Oct. 1. With many distinguished guests from the government, the academic circle and the press, including the Minister of Land, Transport and Maritime Affairs attending, KRIHS held the celebration event to reflect on its footsteps over the past three decades and envision next 30 years. Additionally, the new KRIHS CI was announced at the ceremony. Symbolizing new territorial values nesting in the land, the new CI beholds the vision of KRIHS re-creating itself as a futuristic research institute to brace for global and domestic change in circumstances for spatial policy.

Urban Information Network Upgraded

The Urban Innovation Center has reorganized the Photo Gallery of the *UBIN*, the web service providing information on global advanced cities and on Livable City Creation. As a result, as of Oct. 9, approximately 4,500 photos of over 80 global cities have been made available on the web. In addition, the web has introduced new functions that allow for a convenient information retrieval, and to show maps and satellite images providing locational information of the photos. The *UBIN* has also stepped up the interactive communication function with the user by newly providing the My Album, in which the user can upload their photos onto the web, and by adding the comments function to the Photo Gallery. The new services are currently available from the website at http://ubin.krihs.re.kr/.

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Int'l Seminar on Integrated SD-GIS Model Construction

On Sep. 23, the Geospatial Information Research Center hosted the international seminar, 'Integrated SD-GIS Model Construction,' inviting renowned experts at home and abroad including Prof. Saeed from the Worcester Polytechnic Institute, and Prof. Clarke from the University of California, Santa Barbara. With more than 150 persons participating, the seminar offered presentations and discussions on a variety of related topics including diversity in the comprehensive structure of system dynamics, the Sim City, and the integrated time-space-human simulation system.

30th Anniversary Celebration Seminar

On the occasion of the 30th anniversary, KRIHS held an international symposium, 'Global Challenge and Territorial Development Strategies' on Oct. 1. The symposium was organized to explore future directions to spatial planning of Korea amid global challenges including climate change. World-renowned scholars and experts on spatial planning were invited including Prof. Capello of the Politecnico di Milano, Italy, Prof. Koh of the Wageningen Uni., the Netherlands, and Prof. Sassaki of the Osaka Uni., Japan, and provided presentations on key issues in future spatial policy including creative city, and relation between landscape approach and spatial planning. Also, Dr Choi, Director of the Environment and Culture Research Division offered a presentation to present futuristic territorial strategies for green growth and creation of new territorial values in Korea. More than 200 people attended the seminar showing keen interest in the theme.

Training Program for Iraqi Officials

KRIHS invited a total of 16 officials from the central government of Iraq and provided a workshop titled, 'Regional Development Policy,' from October 14 to 26. The program was organized to introduce the urbanization and industrialization process of Korea over past decades so that the participants may learn from Korea's experience. Major issues in regional development including land development system and SOC policy were also dealt with. In particular, the workshop on the Saemaul Undong Movement - New Village Movement of Korea - was offered during the program to present strategies for the development of rural regions at the village level.

KRIHS-WBI Joint Workshop on Regional Development

On Oct. 29 to 30, KRIHS held the workshop titled, 'A Senior Policy Seminar on Management of Regional and Spatial Development.' The seminar was jointly organized with the World Bank Institute (WBI) with the intent to provide

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officials of EAP and ECA countries with current perspectives and policy tools for spatial dimension of economic development. In addition, the seminar was initiated to explore collaboration between KRIHS and the WBI to support territorial and regional development of the above countries.

Twelve senior officials from ten countries of Lao PDR, Vietnam, Uzbekistan, Kazakhstan, Tajikistan, Thailand, China, Turkmenistan, Malaysia and Kyrgyz were invited, and experts from the WBI and Korea offered presentations on related themes including 'Strategic Management for Growth and Regional Development' by Dr Indermit Gill of the World Bank. The participants shared their knowledge and experience in territorial and regional development through panel discussions.

MOU Signed with JSC Economic Research Institute, Kazakhstan

On Oct. 31, KRIHS concluded the MOU on research collaboration with the JSC Economic Research Institute (ERI) of the Ministry of Economics and Budgeting Planning, the Republic of Kazakhstan. Under the agreement, the two institutions agreed to cooperate for research development on theoretical and practical issues in economic development along with various related activities including personnel training. For the signing, Ms Toxanova, Vice President of the JSC ERI visited KRIHS. During her stay, Ms Toxanova held a meeting with KRIHS President and executives to discuss pending issues in economic and territorial development of both countries.

Annual Korea-China Joint Workshop on Land Policies

The annual Korea-China joint workshop on land policies was held at the KRIHS Conference Room on Nov. 11, jointly by KRIHS and the College of Southeast Land Management of Zhejiang University, China. The theme of this year's workshop, the 8th meeting since 2000, was 'Change in Property Market and Housing Policy.' Six presentations were offered by both parties, and the topics covered at the workshop included 'Development of Eco-housing in China and Evaluation System' and 'Restructuring of Housing Supply System in Response to Low-Fertility Aging Society and Expanded Housing Supply in Korea.'

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Korea Research Insitute 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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