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SPACE & ENVIRONMENT is primarily intended to help foreign experts and professionals in relevant fields understand overall present situations of spatial planning and policy of Korea, and published bimonthly by KRIHS.

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Saemangeum: A role model of green growth

Geoeconomically, Korea is a gateway to Northeast Asia. In particular, the Saemangeum area on the southwestern coast is of special importance. Saemangeum is a 401km² plot of reclaimed land separated from the sea by the world's longest dike, at 33km. The area is about 66 percent bigger than that of Seoul, 58 percent larger than Singapore, four times bigger than Paris and five times bigger than Manhattan.

The reclamation work began in 1989 under the Saemangeum Comprehensive Development Project. After three years of preparation, construction of the dike began in 1991. According to the original plan, 283km² of land, or approximately 70 percent of the total area, was to be used for farming, with the remaining 118km² to be turned into a fresh water lake that would supply about 200 million m³ of water for the farms.

After 14 years and five months of work, the 33km long Saemangeum sea dike was connected on April 2006. The government unveiled an ambitious development vision for the Saemangeum area on April 3rd, 2007.

According to this plan, 202.5km² of land, or 72 percent of the total area, would be used as farmland, while the remaining 80.5km², or 28 percent, would be developed for multifunctional purposes, including an industrial complex, tourist resort, energy park and urban center.

The Lee Myung-bak administration, inaugurated on February 2008, revised the 2007 vision in response to rapidly changing domestic and global economic circumstances and turn Korea into a leading economic hub in Northeast Asia. At the end of October 2008, the government prepared yet another new proposal, dubbed the Amendment of the 2007 Vision for Saemangeum Land Use, putting more emphasis on multipurpose land use.

Based on the amendment, the Saemangeum Committee formed major principles on July 2009, and then the government finalized the

New Saemangeum Plan on January 2010 after garnering consensus among the general public, including experts.

Major Goals

To realize the vision of “The City of Neo Civitas, Saemangeum 「Ariul」¹⁾,” this new plan proposes six major goals.

First, it aims to turn the Saemangeum area into a hub in a new global economic system. By attracting foreign capital, manpower and technology, it expects Saemangeum to contribute to Korea’s competitiveness in international markets and help generate new growth engines for the economy.

Second, it aspires to create an Asian cultural and tourism services powerhouse in the area. Utilizing local historical and cultural heritage, natural environments such as the Gogunsan archipelago, ecological resources on the west coast and facilities like the Saemangeum sea dike, it aims to attract a large number of Korean and foreign visitors.

Third, the plan seeks to develop Saemangeum into

a leading low-carbon, green growth area. Adopting resource-recycling systems and a carbon reduction method, it would serve as an example for green growth and future city development.

Fourth, it intends to develop Saemangeum in such a way that the current “clean” environment and ecosystem are maintained. For this, environmental and ecological zones will be established throughout the area.

Fifth, it aims to promote Saemangeum’s image around the world as a premium global city through marketing and publicity activities.

Last but not least, the new plan aims to produce a new model for executing large-scale state projects. In other words, it seeks to develop the Saemangeum area complete with infrastructure and institutions that will serve as a globally recognized case study.

Land Use & Development Scheme

To meet these goals, the government has suggested a development strategy for Saemangeum. It divides the

Figure 1 : Bird's Eye View of Saemangeum



1) Ariul : ‘Ari’ and ‘ul’ are ancient Korean words meaning water and lot, respectively

reclaimed land into eight districts, considering national policies, regional development, development potential and site suitability. These districts have multifunctional capabilities, such as farming, manufacturing, tourism/leisure, international businesses, science and research, new and renewable energy production, dwellings and environmental and ecological protection.

Depending on the degree of development and its prospects, the new plan designates about 30 percent of the total reclaimed area for farming and about 70 percent for other functions. The 2010 plan excludes those sites for tourism and leisure and those needed for early development from the reserved land while following the principle of allocating lands proposed in the 2008 amendment.

In addition, it includes a scheme for creating a multi-functional city (core strategic area) encompassing the functions of industrial complexes, international business services, tourism and leisure, and ecological and environmental amenities.

More specifically, 85.7km² of the reclaimed land is to be allocated for farmland, 39km² for industrial complexes, 24.9km² for tourism and leisure, 20.3km² for new and renewable energy sources, 5km² for international businesses, 23km² for science and research, 14.6km² for residential sites and 59.5km² for water quality and ecosystem conservation zones.

The most significant feature of this new plan is the government's vision to create a multi-functional city, named the "Premium Multi-City," in Saemangeum. As such, it has designated a "core strategic area" of 67.3km². It includes 20.3km² for an industrial complex site(FDI), 24.9km² for a tourism & leisure site, 5km² for an international business site and 17.1km² for an ecologic & environmental zone. The government has been soliciting professional advice on this development from experts.

Land Use Zoning

The zoning of the area was decided on the basis of the results of site suitability analyses that took into account accessibility, environmental and economic factors and the relationship with other areas under development, as well as various legal and technical restrictions.

As a result, the industrial complex site will be located in the northern part of Saemangeum in

conjunction with the Gunjang National Industrial Complex. The tourism and leisure site will be located in the southern part in view of its proximity to the Byeonsanbando National Park. In addition, the international business site - part of the industrial complex, which is the foreign direct investment area - and the new and renewable energy site will be placed in the center to serve as a new urban development axis. It will be ultimately connected to Jeonju and other cities near the Saemangeum area.

Feasibility Review

The government will make a final decision after gathering enough opinions and reviewing the validity of designs. The feasibility review of the development plan has been conducted in four fields: environmental conditions and effects; the volume of water usage and its supply source; traffic volume and required transportation facilities; and the volume, source and supply of sand and stone for engineering projects.

In environmental terms, the review concluded that the Dongjin River zone would meet national freshwater quality standards, while the Mankyong River zone would require the installation of an additional chemical sewage processing facility at the Iksan and Jeonju sewage disposal sites. The review suggested that the water quality in the area bordering the sea dike would deteriorate.

Secondly, as for water supply, the review said that as much as 522,000m³ of fresh water per day would be required for living and industrial activities; water can be supplied from the Yongdam Multipurpose Dam.

Thirdly, regarding transportation, the review expected no problems if the current construction plans for transportation facilities are carried out. An intra-arterial road transportation network will be planned for optimal accessibility to each site according to function, and further enhance traffic flow among sites by establishing a three-by-four grid and introducing three circulating rings. The goal is construct transportation networks via the combination of placid and spoke structures.

Fourthly, in terms of engineering, the review estimated that about 600 million m³ of sand and stone would be needed for the project; a stable supply could be secured by dredging the Gunsan Port.

The Establishment of the Master Plan

On March 2011, the government finalized its Master Plan of Saemangeum Development (hereinafter refer to as the Master Plan), which is based on the proposals presented in the Comprehensive Development Plan for Saemangeum.

The Master Plan further outlines plans for land use and building infrastructure, completing the blueprint of the Saemangeum development plan.

The Korea Research Institute for Human Settlements (KRIHS), the main research body in charge of the Saemangeum development plan, has conducted researches entitled “The Establishment of Land Use Plans of the Saemangeum Reclamation Area (2006),” and “A Study on Development Plan for Land Use of the Saemangeum Reclamation Area(2008).” KRIHS played a leading role in integrating and coordinating Saemangeum development plans when eight relevant authorities - including the Ministry of Land, Transport and Maritime Affairs, the Ministry for Food, Agriculture, Forestry and Fisheries, the Ministry of Knowledge Economy and North Jeolla Province - carried out the above research.

Key Strategies

The Master Plan includes various and specific measures to push the following the key strategies: realizing creative green and waterfront cities; building a future-oriented green infrastructure; and securing the quality of water. In particular, the Master Plan suggests development visions for multiple-purpose land use in developing Saemangeum into a premium global city, including the scale, locations and timing for building infrastructure such as ports, roads and railroads.

Key measures to materialize the above three strategies are as follows:

Regarding the first strategy, the Master Plan includes developing Saemangeum into a premium multifunctional city combining residential and business districts. It will serve as a growth engine to attract people, capital and technology through linkage with new ports. Also, one area in the city will be designated as a public transportation-only zone. Multimodal trams, water taxis and buses will be featured.

According to the Master Plan, the new renewable energy complex will be built on an area as large as about 20km², the largest of its kind in the world. The vision is for it to serve as a mecca of new and renewable energy. The energy complex will feature solar energy and hydrogen fuel cell verification, a new and renewable energy school, research & experiment facilities, and test-production centers for biofuel crops and photovoltaic energy, thereby strengthening the value chain.

Saemangeum will be maintained as a pristine ecosystem where human beings live in harmony with nature. To this end, wetlands will be built to clean contaminated water, and a habitat and an ecological center for birds will be installed. The Suncheon Bay Ecology Park and other best practices of advanced countries will serve as benchmarks.

To develop Saemangeum into a high-quality export-oriented agricultural base for global competitiveness, areas as large as 24km² and 7km² will house an horticulture complex and a high-quality export-oriented agriculture cluster, respectively. An Agro-park model for recycling resources will be introduced, in which the whole process of producing, processing and distribution of

Figure 2: The Premium Multi-City of Saemangeum



Figure 3: New Transportation Systems



agricultural products will be integrated and managed. Also, a world-class multi-functional arboretum and an agricultural theme park will be built.

As for science and research, 23km² will be allocated for a science park, which will link with Gunsan airport in order to attract core technologies in such sectors as aviation, including maintenance, repair and operating (MRO), energy and marine. In Shinsu-Yami, which has been already created for tourism and leisure, a new complex will be built on a 1.95km² site. In addition, efforts will be made to establish a landmark to promote Saemangeum as a futuristic city brand.

With regard to the second strategy, the Master Plan has been further specified from the infrastructure establishment plans proposed in the Infra Development Plan for Saemangeum, released on January 28, 2010. It seeks to strengthen transportation and logistics networks linking major regions near and far. A new port with 18 piers will be built on an artificial island, which provides favorable conditions for secure waterfront areas and tidal currents. It will serve as a foundation for promoting logistics and tourism.

In terms of transportation systems, a 3×3 arterial road network will be built. A new highway will link Saemangeum and Jeonju, and a double-tracked electric railroad will link Saemangeum and Gunsan. This will further facilitate the function of passenger transport and logistics of the Saemangeum new port. To enhance global accessibility to Saemangeum, the existing Gunsan airport will be expanded for international flights. An expansion of the airport will be examined to meet future demand.

Along with this, recycling measures in line with the national drive for low-carbon green growth have

been proposed. They include introducing smart water grids, adopting an innovative Mechanical Biological Treatment (MBT) system, and establishing an Agro-Park to facilitate a virtual cycle of resource recycling. Plans to prepare against possible typhoons and tsunamis are included as well.

Concerning the third strategy, methods to manage water quality have been put in place based on water usage according to each zone: the targeted water quality for city areas is third grade; a fourth grade is targeted for farming areas. An approach to addressing water quality degradation in the upper part of the Saemangeum will be adopted in farming areas; for city areas, targeted water quality will be managed through efforts to maintain the current water quality. Around 2.9 trillion won will fund 45 detailed projects such as expanding waste management facilities and forming ecological rivers.

As mentioned earlier, the Master Plan has undergone further specification of land use and infrastructure establishment from the previous comprehensive plan that was suggested in the Infra Development Plan for Saemangeum. It will serve as a comprehensive guideline to create Saemangeum as the City of Neo Civitas.” It is hoped that Saemangeum will be touted as a truly world-renowned premium city. At the same time, Saemangeum will hopefully serve as an attractive mecca of culture and tourism, a leading example of pursuing low-carbon and green growth and an ecological treasure. Ultimately, it will serve as a growth engine for Korea to be an economic hub of Northeast Asia.

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Bundling the Construction Industry with Oil, Gas, and Mineral Development

New Resource Development Strategy

The struggle to secure resources is intensifying worldwide. Recently, in the wake of a territorial dispute, China halted exports of rare earth elements to Japan as a punitive measure. This is an example of how securing natural resources is essential in industrial production and is an important issue that determines a country's survival. Awareness of this problem is one reason behind Korea's considerable diplomatic efforts.

Energy and mineral resources are among those that are becoming more important. Note, however, that Korea's self-development rate of energy resources is about 9% overall, and about 25% for six strategic minerals such as uranium and nickel. Korea's capital and manpower for resources development leave a lot to be desired, compared to emerging countries such as China as well as major developed countries. Korea's ability to compete with such countries is extremely limited in this regard. Accordingly, efforts to consolidate Korea's overall competitiveness in the overseas resources market should continue. As such, it is important to pursue package deals such as linking infrastructure building with resources development based on experiences accumulated so far.

In particular, overseas construction and plant markets have rapidly grown since the mid-2000s, and Korea's global reputation regarding technology and construction capabilities has improved. This is because Korea has become increasingly involved in supplying infrastructure that supports developing countries' economic development. This year, Korean firms expect to garner more than US\$ 70 billion worth of construction orders from the international market. The strategy of securing resources in underdeveloped countries with abundant potential resources but skimpy investment resources for infrastructure, and using Korea's technological prowess accumulated from overseas

construction, has been recognized as a new win-win resource-securing strategy.

Five Major Aspects of Linking Infrastructure Building with Overseas Resource Development

Combining the infrastructure construction and plant industries with resource development abroad presents five various and major aspects: the spatial and business relevance of each activity during combining; combining method vis-a-vis the development stage; complexity involved in combining; initiative aspects of a targeted business ; programmatic approach to combining.

The details of the five main aspects are presented below.

- Spatial association means that the business is carried out in an integrated manner across all processes of resource exploration, development, production, and distribution. In other words, it is a business wherein the upstream flow of resources development and the downstream flow of the plant, including power generation and transport infrastructure are combined consistently. The Ambatovy Nickel Mine in Madagascar is a good example. Meanwhile, a spatially non-associated business involves implementing a business type separately instead of bundling between resource exploration or development rights and infrastructure. One of the spatially non-associated business types is the case in which contracts for infrastructure projects and plant construction are separate from resource development rights in an underdeveloped country.

- The resource development stage is where exploration, development, and production stages are combined with the SOC/Plant sector. Most cases of combining construction with overseas resources development occur in the development and exploration stage, combined. However, depending on the flows of the exploration, development and

production stages, bundling construction with the exploration stage becomes more difficult due to issues of risk. Survey exploration determines the size of the discovered potential reserves and the level of commercial feasibility.

- The level of complexity during combining is associated with the diversity of objects targeted to be linked. This can be divided into complex-type bundling businesses and single-type bundling businesses. A complex-type combining business refers to the case wherein various businesses, like plant and infrastructure, are bundled in a complex way, as opposed to a single business that is bundled with resource development. Potentially, many problems can arise for business participants, including increased risk distribution. Thus the need for suitable organizational composition is increased.

- Regarding the business objects targeted for combining, the following scenarios are possible: 1) the resource development business becomes the main business while the SOC/Plant construction business becomes supplementary; 2) resource development rights are acquired in return for carrying out the SOC/Plant construction business; and 3) the resource development and SOC/Plant sectors have mutually equal stakes. Depending on the leading business participant, the business implementation mode will differ, including consortium composition. The gestation period of invested capital is more than 10 years (long-term) for the resource development business. For construction and plants, it is about 2 to 3 years. In this context, the adjustment of the gestation period of invested capital differs depending on which sector has the initiative.

- Regarding programmatic approach to bundling, this is about whether linking infrastructure construction with resource development is carried out from a gradual, long-term perspective or from the short-term perspective. The linkage business approach from the long-term perspective involves discovering and implementing the bundling business through systematic survey and preparation in a comprehensive development cooperation framework. Note, however, that combining from the short-term perspective is possible for small-scale business that are bundled during the production stage in the private sector. The possibility is limited during the resource exploration stage.

Cases of Bundling Business

As shown in Table 1, businesses that were or are currently implemented include nickel mine development and power plant construction in Madagascar, offshore oil field development and power plant construction in Nigeria, Kurdish oil development-SOC bundled business in Iraq, Surgil gas field development and gas chemical plant construction in Uzbekistan, and water resource development cooperation and the resource bundling business in the Democratic Republic of Congo. Although the Ambatovy Nickel Mine business in Madagascar is currently running smoothly, other bundling businesses have experienced various problems in the implementation process. We will explore the various uncertain factors.

The case of the Ambatovy Nickel Mine is a significant case study. A Korean company operates the relevant plant business through equity investment in the nickel mine development consortium. This is the first example of a linkage business by a Korean company. Despite difficulties due to the nickel price decline, management risk of the equity-invested company, and political instability of Madagascar, this can be considered a rather successful case.

The offshore oil field development and power plant construction business in Nigeria is a good example of how Korea National Oil Corporation (KNOC) has combined the signing of the contract for a promising oil exploration area with the oil downstream business and SOC investment. Note, however, that ups and downs have been observed - including suspension of business at some point - because of the non-payment of the signature bonus owing to the change of regime. As seen in this case, it is important to secure the stability of a contract through strict measures of contract creation in the implementation of the bundling business.

The gist of the Kurdish oil development-SOC business is that KNOC signed an oil exploration area contract (five oil exploration areas out of a total of eight) with the Kurdish government (Iraqi local government), with KNOC carrying out the SOC business worth US\$ 1.9 billion. Note, however, that the unconfirmed Oil Act poses an obstacle to business implementation owing to the conflict over the Iraqi Oil Act between the central and local governments of Iraq.

The Surgil gas field development and production project, including gas chemical plant construction and operations, was implemented as a large-scale project worth US\$ 4 billion between a consortium including KNOC and Uzbekistan's joint venture. But it suffers from some difficulties due to additional burdens associated with capital increase.

In the case of DR Congo, preparation for business implementation, including the bundling of Banana Port development with water resource areas (dam, water supply and drainage) is underway. With regard to the development of Banana Port, it is essential to actively consolidate the global cooperation base, i.e., by sharing Korea's port development experiences with public officials of Congo.

Strategies of Bundling Construction with Resource Development Abroad

The strategy of bundling construction with resource development abroad should be set in five directions as follows:

First, there needs to be a strategy to select and concentrate on a stronghold country in each region. The strategy is to disseminate the achievements to surrounding countries in subsequent fashion. Focus should be on the government's sources of funds including ODA, EDCF, and KOICA. The public officials and experts of the host countries should be invited to participate in discussions on how to share Korea's land development experience and know-how. Analysis shows that France's Total and Italy's

Table 1: Cases of Linked Entry for Resource Development

Country	Company	Project	Size	Details
Madagascar	• KORES • Daewoo International • Keangnam Enterprises • STX	Ambatovy Nickel Mine Development	US\$ 4 billion	Infrastructure construction including power generation and nickel mine development
Nigeria	• KNOC • KEPCO • Daewoo Shipbuilding & Marine Engineering • POSCO ENC	Offshore Oil Field Development and Power Plant Construction	US\$ 4.7 billion	Construction of 2.25kw power plant and gas pipes bundled with 2 oil field explorations (OPL 321 and 323, Nigerian offshore oil exploration areas) (Total cost: 3.3 billion won)
Kurd in Iraq	Seven companies including • KNOC • Ssangyong ENC • Hyundai ENC	Kurdish Oil and Infrastructure Development	US\$ 10 billion	The Kurdish government provided 8 oil exploration areas and SOC construction worth 2.1 billion won (power plant, water supply and drainage).
Uzbekistan	• KNOC • Honam Petrochemical • STX Energy	Surgil Gas Field Development and Gas Chemical Plant Linkage Business	US\$ 4 billion	Surgil gas field development, production and gas chemical plant construction and operation
DR Congo	• MLTM • POSCO Group	Banana Port Development Cooperation in DR Congo	US\$ 5 billion	Bundling Banana Port development (general wharf - 3 berths, container wharf - 2 berths, course dredging) with resource development
	• ARK (Subsidiary of European Fund in Korea) • K Water • KORES	Case of Bundling between Water Resources (Dam) and Mineral Resources	US\$ 750 million	Water resources SOC construction (Congo's Kony Dam and Mwadingusha Hydroelectric Power Plant Dam) and mineral resources (copper, cobalt)
	• Taejoo Stainless Steel • Hyundai ENC, • Kolon • Korea Rural Community Corporation • Geogeny	Resource Development Bundled with Water Treatment Plant and Water Supply and Drainage	US\$ 2.7 billion	Acquired Musoshi copper mining right worth US\$ 2.7 billion in return for construction of water treatment plant in Kinshasa

ENI have been successful in bundling resource development through this strategy.

Second, comprehensive economic cooperation should be sought for mutual prosperity. The strategy of combining infrastructure construction with resource development is likely to succeed only when it is implemented on the premise of comprehensive economic cooperation and true partnerships. Investors can Korea's development experience, including Saemaul Movement, and offer tailor-made assistance such as medical service offerings for remote villages.

Third, a short-term, visible entry strategy and a mid- and long-term strategy need to be combined properly. In the short-term and visible entry strategy, participants search for a business to link with in a partner country and build an earning model. The mid- and long-term entry strategy focuses on establishing a co-growth model with the host country.

Fourth, a strategy is required to enter together with a resource/energy-developing public corporation and an SOC public corporation. Package-style overseas resource development projects require large-scale investments, and there are too many risk factors for a private company - which is based on short-term profitability - to lead such investment. Consequently, ventures between public corporations may have higher chances of success than ventures between private companies.

Fifth is a strategy to use MDB (Multilateral Development Banks) actively. The infrastructure development business required by an underdeveloped country with resources needs large-scale capital. Therefore, it would be difficult to meet such capital needs solely through Korea's ODA (Official Development Assistance). Accordingly, size-based assistance expansion is necessary through cooperative loans from MDB. For such loans, network consolidation with MDB is required. Through the payment guarantees of cooperative loans by Korea EXIM Bank, investments from MDB can be attracted. MDB's investments and loans for resource development-bundled business are very important in terms of ensuring business stability.

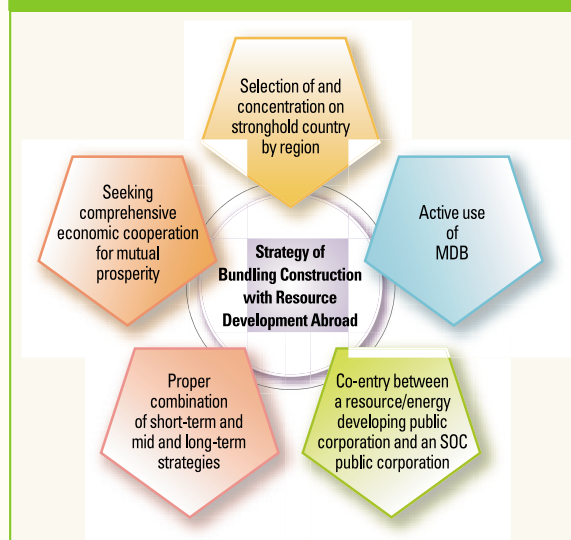
Measures to Support a Bundling Business Project

Support measures in stages to encourage a bundling business when entering overseas markets

Advancing into an overseas market with packaged business projects is categorized into four stages, and support measures for each stage are presented as follows:

- In stage 1 (forming the foundation), international development cooperation contracts should be signed. These can include implementation of FTA with a host country & signing of investment guarantee agreements, and proposals for free or paid ODA assistance with a potential host country.
- In stage 2 (discovery stage), the goal is to identify mid and long-term, systematic, and strategic overseas resources for a combined business. A formation of the "Council for Combining Construction with Resource Development Abroad" has been suggested.
- In stage 3 (feasibility survey stage), it is suggested to designate an agency for establishing and consolidating an integrated system to support feasibility surveys as well as the upward adjustment of treasury assistance payment criteria.
- In stage 4 (financial structure and financial procurement stage), it is suggested to set up financial structures to address political risk, to support business implementation according to the packaged projects organizing mode (special-purpose company or SPC), procure investment capital, and provide financial and taxation assistance.

Figure 1: Five Strategies of Bundling Construction with Resource Development Abroad



Measures to consolidate capabilities for bundling business

Measures to consolidate capabilities of bundling construction with resource development overseas include preparation of a support system at the pan-government ministry level; fostering the private sector's resources and creating an advanced company specializing in bundling business; consolidation of a financial and investment assistance base; building of a model to share the governmental and private sectors' roles at each stage; establishment of an integrated information system; and training of specialists.

To activate the business, a function for integrating and tweaking support systems currently segmented into various government ministries and relevant industrial support agencies is required. To be specific, the government should prioritize the project. It should naturally link the project with the Overseas Entry Council within the Ministry of Strategy & Finance and International Development Cooperation Commission under the Prime Minister's Office, which performs integration and adjustment functions courtesy of ODA (Official Development Assistance). Moreover, a system to identify potential business and requirements can be devised at the private-sector level through a global network. Fortunately, Korea's large-scale companies in the energy and resources sectors all have construction

sector affiliates. Thus, carrying out a packaged overseas resource development project at the conglomerate level can maximize the synergy effect.

The financial support system should be expanded through loans from energy special funds. Although Korea EXIM Bank and Korea Trade Insurance Corporation offer various financial support measures, they are not that different from foreign financial institutions in terms of their terms and conditions. Consequently, there is a need for customized financial and insurance conditions, including comprehensive consulting channels and shaping of the one-stop financial assistance environment. Converting the existing special loan debts into equity should be reviewed, considering the existing difficulties in new capital investment support for the nurturing of resource-developing public corporations.

Private companies face big challenges in investing large-scale capital, because they must cope with the long-term gestation period, and in negotiations with a host country. In this context, a model that reasonably divides the roles of government (public corporations) and private companies appropriately at each stage needs to be created.

In addition, an integrated information network system must be built and operated in order to acquire systematic overseas resource development, infrastructure, and plant information.

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A Korean Model for the Diagnosis and Forecast of Real Estate Market Trends

Korea's Real Estate Market Challenges

As the problems within the real estate market are not only affecting the market itself, but also having an increasingly huge impact on the overall national economy, the selection of an appropriate policy to solve such problems is far more important than in the past.

Through the sub-prime mortgage debacle at the end of 2007, we confirmed that rapid change in the

real estate market has a huge effect on the financial markets and national economy. In that context, the importance of stability in the real estate market increases. However, Korea's real estate market is still in an unstable situation, and price fluctuations repeat cyclically.

Moreover, Korea's real estate market problems differ in their characteristics according to period. During the 1960s and 1970s, when land was developed extensively, real estate problems

occurred due to excessive land speculation due to the considerably high demand. Since then, as urbanization accelerated in line with economic growth, housing shortage in cities became a very serious problem.

Particularly, even though Koreans enjoyed an rapid increase in their income levels in the mid-1980s, the percentage of houses versus the total number of households hovered at around 75%. Therefore, the housing shortage within cities became a serious social problem.

The government worked intensively to provide about 5.7 million houses during the period from 1989 to 1996 to ease the housing shortage problem and stabilize society. Consequently, Korea's real estate market showed a stable trend, with housing prices increasing at a rate of 1~2% annually on average during the period 1990 to 1996.

Naturally, many housing policies and regulations were created. In the process of overcoming the foreign exchange crisis, however, policies easing these rules on large-scale real estate markets were made; housing construction - failing to keep up with the increase in population because of the market downturn - caused instability in Korea's real estate market.

Since 1960, Korean society has suffered from an unstable and cyclical real estate market due to its rapid growth and urbanization. This has awakened policy makers and the general public to the important fact that real estate problems should not adversely affect the population's living conditions or serve as a stumbling block as Korea joins the group of advanced countries.

Real estate is typically perceived as a property to be bought, not a place to live. But skyrocketing housing prices and the deepening gap between the rich and the poor requires a change in thinking.

Development of Korean Version of Real Estate Market Analysis and Prediction Model

Many previous studies on the real estate market have analyzed Korea's real estate market and presented policy improvement suggestions using various analysis techniques. Many have greatly contributed to a more advanced real estate market

and increased policy effectiveness. Still, some argue that a comprehensive explanatory analysis on the real estate market is lacking. Others insist that the explanation on the localized and segmented Korean real estate market should be consolidated.

In the 2000s, Korea's real estate market has become more segmented, and market behaviors have become more complex owing to the expansion of housing supply and easing of socioeconomic fluctuations. In this context, it is ever more difficult to establish suitable policies by identifying changes in the real estate market - which are more complex and localized.

However, instability in the real estate market is highly likely to become a negative factor in the national economy. Addressing this instability problem requires precise and diversified market information collection and analysis. However, such a system for this has yet to be put in place.

The development of a Korean version of the real estate market analysis model stems from a general awareness that the minimization of volatility in the real estate market is a fast path to stabilizing housing conditions. Such minimization is possible through developing models and analysis systems for the real estate market.

Since 2008, KRIHS has not merely analyzed the real estate market based on facts such as prices and supply, but has been striving to develop a market analysis model through which market trends are analyzed by measuring consumer sentiment, policy change, and external shocks. This three-year effort has led to the establishment of the KRIHS Model for Real Estate Market Analysis & Prediction (K-REMAP). Even to this day, KRIHS is continuing with various efforts to develop and enhance K-REMAP.

K-REMAP: Four Real Estate Market Analysis Models and Three Information Systems

K-REMAP¹⁾ is a comprehensive real estate market analysis system for analyzing and predicting real estate market trends by taking into account market pressure, consumer sentiment, economic indicators, and policy change.

KRIHS surveyed the market trends of 150 city

1) K-REMAP was developed to predict the real estate market by detailed region quarterly, semiannually, and annually.

regions in Korea and developed K-REMAP to express the predicted results as indices. To help users better understand this system, the result values have been classified into 9 sections and marked on the map. This map is called a real estate market map and a situation board.

The main features, system configuration, and main functions of K-REMAP are as follows:

- Integrated market DB of real estate market information, consumer sentiment, policy diffusion effects, and spatial information
- Analysis and prediction of real estate markets locally and nationwide
- Establishment of real estate consumer sentiment survey system
- Consists of four models so that analyses can be

made for each real estate feature

- Established a “One-for-Three Structure” (simultaneously carrying out data collection, market analysis & prediction, and analysis results)

K-REMAP consists of four models and three information systems.

The four models²⁾ are: real estate market pressure analysis model, consumer sentiment analysis model, policy effects analysis model, and price fluctuation analysis model.

The three information systems include data collection system, real estate market analysis system, and real estate market information system.

The main functions of K-REMAP are as follows:

The four models provide quantitative and qualitative methodologies for real estate market

Figure 1: Real Estate Market Analysis Results

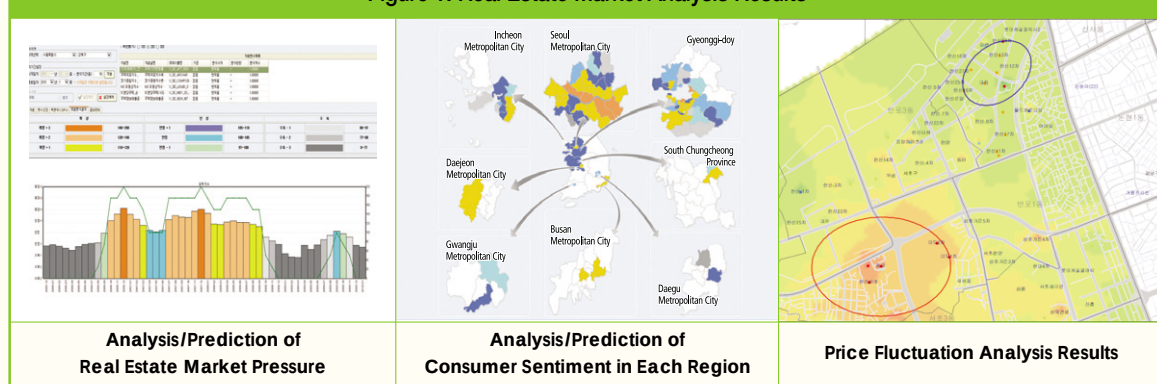
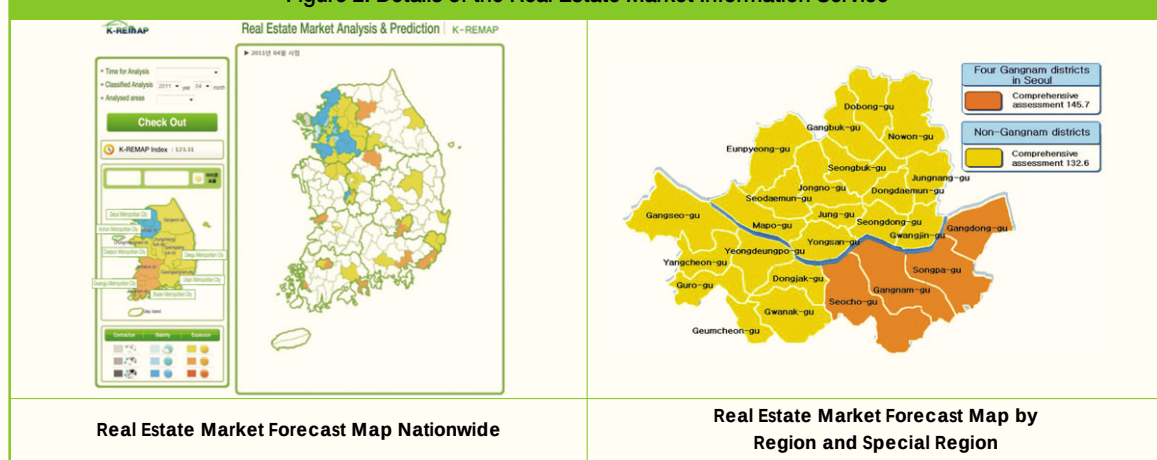


Figure 2: Details of the Real Estate Market Information Service



2) The four models are the core factors of the real estate market analysis system, one of the three information systems.

analysis and prediction. The functions of the individual models are presented below.

- Real estate market pressure analysis model: Analyze and predict housing and land markets by reflecting the real estate values (price fluctuation rate), demand, supply, financing, and general economic cycle.
- Consumer sentiment analysis model: Survey and analyze 37 items including prices, transactions, relocations, and financing, targeting general consumers (6,400), real estate agents (2,400), and experts (60) monthly/quarterly.
- Policy effects analysis model: Analyze the impacts of real estate policy change on the local market (prices, demand, and supply) and national economy including GDP and employment.
- Price change analysis model: Locally explore hot and cold spots with abnormal real estate prices.

The three information systems are based on metrics and algorithms to handle the entire process of real estate market analysis and prediction as a one-stop service. The main functions are as follows:

- Data collection system: Integration of various data, DB establishment
- Real estate market analysis system: Analyze and predict the real estate market using four models.
- Real estate market information system: Real estate market forecast map and situation board, information offered to the relevant agencies and citizens, decision support system (DSS), etc.

Efforts to Develop the Real Estate Market Model for Stable Housing Conditions

Real estate speculation can contribute to the long-term social conflicts in a rapidly developing country, such as the wealth gap. Although the Korean government has made huge efforts to block real estate speculation in the fast economic growth process, it is still difficult to convert the real estate market - which has become the object of speculation - into a sound investment area.

This year, KRIHS is developing a system that enables a real estate policymaker to verify the impacts of the scheduled introduction of the policy to stabilize housing conditions for all citizens on the market prior to actual introduction, based on past studies. The purpose of developing the model is to form a predictable real estate market environment, minimize the unearned income generated from real estate, and avoid a huge income gap between classes.

When the national economy is in the growth process, there is an avoidable aspect, i.e., private or speculative capital inflow due to weak government finance. When a nation's society and economy reach a certain level, it is on the threshold of becoming advanced; however, national unification and sound national competitiveness are very important.

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Huge Challenges ahead for Korea's Local Governments: Immigrant Integration

Korea's Central Government-Guided Immigrant Integration Policy

In 2007, immigrants residing in Korea surpassed the 1 million mark. Based on the official count, the number of immigrants in 2010 reached 920,000; including short-term residents increases that to 1.2 million. With the rising immigrant population, an associated integration policy to support them has

developed rapidly. The basic directions and principles were established on May 26, 2006, during the first Immigrant Policy Meeting, presided over by the President of Korea. Since then, the policy has been rapidly expanded. However, the effect of the policy is very small in reality.

Many experts repeatedly point out that in terms of its efficiency and effectiveness, the government policy leaves a lot to be desired, and that areas

where the policy is not applicable can easily be found. The main reason is that the role of local governments is very weak. In most local governments, the organizations in charge of immigrants have yet to be organized systematically. Their role is in the infancy stage, merely providing counseling, interpretation, and language education. It is difficult to understand why local governments are relatively passive regarding a migrant integration policy, considering the increasing numbers of immigrants and related problems.

Need to Localize the Immigrant Integration Policy

To localize the immigrant integration policy, social integration-related policies that are sporadically implemented by each government ministry need to be integrated and coordinated. From the long-term perspective, central government ministries should delegate these policies and budgets to the relevant authorities. In the meantime, local governments need to create and establish creative policies specific for each region. They need to consolidate the functions of the relevant tasks and reinforce their capabilities. This requires a recalibration of the roles of relevant entities, which range from the central and local governments to private organizations.

Figure 1: Difficulties in Implementing the Immigrant Integration Policy by Local Governments

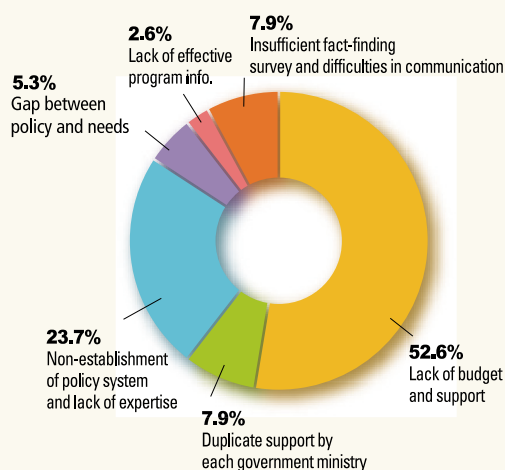


Figure 2 shows the structure of a local government-centered immigrant integration policy. It is desirable for the central government to establish comprehensive guidelines and support implementation. Local governments take charge of creating and executing specific policy development. They can do so through consulting and cooperation with various private and community organizations. In particular, solidarity with private organizations is essential because they have existing experience and relevant networks. When a policy is established, it can be implemented through cooperation with the immigration office, police, hospitals, etc. One of the strong points of local autonomous entities is their capability to mobilize local administrative power.

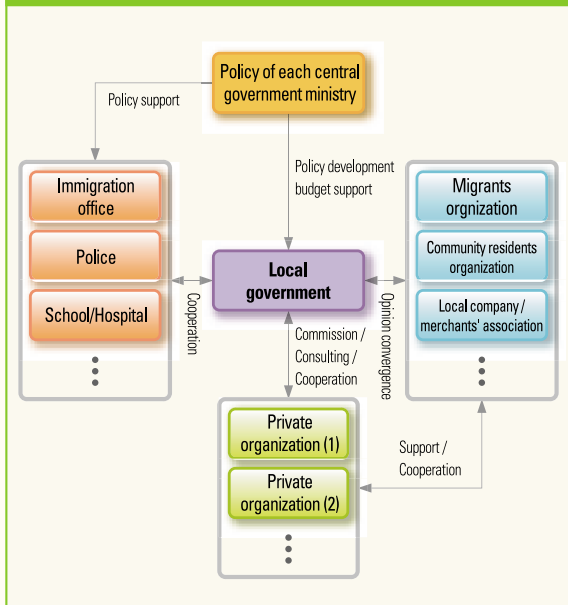
Consolidation of local government policy capabilities

Local governments need to enhance their capabilities with regard to the immigrant integration policy and move beyond a passive attitude, as is the case today. Currently, most local integration policies involve simply carrying out the central government's policy guidelines. Therefore, they neither effectively respond to local-level tasks nor efficiently mobilize the local assets of private organizations and companies. Local governments should provide more budget and personnel dedicated to the integration policy. For the long-term, fact-finding surveys should be conducted among local immigrants. The level of private support needs to be identified. Efforts to enhance the skill levels of public officials should also be made.

Forming social dialogue in each region

In the short run, the key role of local governments is governance. Integration policies currently are sporadically implemented at the local level. But local officials need to serve as agents and directors of the integration policy in their communities and utilize private organizations' support services. Toward this end, there is a need to form a forum for dialogue wherein all community stakeholders participate. The administration, civic organizations, local residents, and migrant representatives need to participate equally, and proactively decide issues related to the migrants integration policy. For their part, the local governments need to accept the decisions.

Figure 2: Structure of the Local Government-Centered Immigrant Integration Policy Implementation



Consolidation of cooperation with private organizations

The private sector is an important asset in supporting immigrants. Local governments should effectively use the resources of local private organization. Private organizations have know-how and expertise when it comes to supporting immigrants, something that the public sector lacks. If the expertise and resources available from private groups are not utilized, the efficiency of a local integration policy might diminish. However, there are both advantages and disadvantages with regard to supporting migrants. Whereas the government is obligated to support migrants because of fairness, equity, and legal binding forces, private organizations are relatively free from such restrictions. Assistance only for those of a specific religion, support for a specific migrant group or for illegal workers, and critical suggestions related to the local policy are possible in private organizations. Private organizations may have insufficient financial resources. Although they come with ideas and know-how, they might not be able to implement services that require massive investments. Private organizations are also weak in the areas that need the government's administrative power. Issues requiring cooperation with relevant agencies such as

the police, immigration office, and district offices can be more effectively dealt with by public administrative agencies. A public-private collaboration can utilize all the respective assets and minimize the disadvantages.

Search for creative, local-friendly policies

One advantage of a local government is that it is located near a majority of residents, including migrants. Local governments specifically understand the need for migrants, along with their potential and problems. Every individual local government should seek creative policies that fit their specific environment. In particular, local governments need to promote increased mutual dialogue and collaboration in communities between immigrants and natives. Most integration policies are at the support level only, merely identifying benefits to the migrants. Policies that emphasize the importance of active coexistence between migrants and local residents, the expansion of administrative participation of immigrants and co-management of community activities will be a positive step forward.

Toward a Diverse, Cohesive City

The normative foundation of the localization of the immigrant integration policies is based on a simple fact that the social integration of immigrants is basically carried out within communities. Immigration administration and basic immigrant manpower policies are the central government's unique tasks. However, the local government's role is to facilitate a stable settlement in the local communities. The central government needs to control the entry and departure of migrants from the aspect of national economic and human resources management, whereas cities need to respond from the context of daily life.

Cities in Europe and North America seek to create a cohesive urban society while maintaining cultural diversity and economic dynamics among immigrants. The catchphrase "Diverse and Cohesive City" is the very embodiment of this idea. It is time for Korea's local governments to take an active interest in such an aim.

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KRIHS' INTERNATIONAL COOPERATION

Chief of the Cartographic Section of the UN Invited to Deliver a Lecture



On March 15, 2011, the KRIHS-affiliated Global Development Partnership Center (GDPC) hosted an expert lecture on measures to strengthen development cooperation between KRIHS and the UN. Mr. Eom Kyoung-soo, chief of the Cartographic Section of the UN, made a presentation on how to promote the development of cooperation between the two authorities, focused in particular on cartographic and spatial information systems. He also asked KRIHS to support and participate in the upcoming Global Geographic Information Management (GGIM) forum, stressing that continuous discussions are needed to set the direction for the vision of the GGIM as well as select its development agendas.

The United Nations Cartographic Section belongs to the Department of Field Support (DFS) within the UN Secretariat and is located in UNHQ in New York. Its main task is to provide geographic and cartographic support to the UN Secretariat as well as to the various peacekeeping missions throughout the world.

GDPC Research Training Program on Urban Planning & Development Course

The KRIHS affiliated Global Development Partnership Center (GDPC) initiated its Urban Planning & Development Course on March 22, 2011. Ten working-level officials from six developing countries, including Nepal, Mongolia, Uganda, Zimbabwe, Vietnam, and



Indonesia, as well as KRIHS researchers - including Dr. Park Yang-ho, president of KRIHS, and Dr. Sagon Ho-sang, director of the GDPC, attended the opening ceremony.

The six-week training course ran from March 21 to April 30 and featured lectures on Korean territory, urban and housing policy, field trips, visits to relevant institutions, and cultural programs. Most notably, the training course drew attention due to its unique program of self-initiated research and training arrangements. The training received a favorable response from participants as a model program. During his remarks at the closing ceremony on April 30, 2011, KRIHS president Park Yang-ho called for a stronger partnership between Korea and participating countries, stressing that training courses are meaningful only when Korea's experience in its national territory development and best practices of its policy applications contribute to establishing national and regional development policies of participating countries.

GDPC and ICSEAD Meet for Further Cooperation

On March 25, 2011, the KRIHS-affiliated Global Development Partnership Center (GDPC) met with the International Center for the Study of East Asia Development (ICSEAD) to introduce KRIHS, the GDPC, and ICSEAD as well as engage in a discussion session. ICSEAD was established in 1989 to carry out diverse activities, including joint research projects, public lectures, publications, researcher exchanges with Asian research centers,



and participation with local university programs in the broadly defined field of economic and social development related to East Asia (including Japan).

In a discussion session attended by Dr. Park Jaegil, senior research fellow of the Green Territory & Urban Research Division, Dr. Lee Dong-woo, head of the Center for Capital Regional Policy, and Dr. Jo Jin-cheol, research fellow of the GDPC, as well as Prof. Hidehiko Tanimura, director of ICSEAD, Prof. Shoichi Yamashita, former director of ICSEAD, and government officials from the city of Kitakyushu, KRIHS and ICSEAD discussed measures to further enhance their relationship. In particular, officials from Kitakyushu city, the sister city of Ulsan, showed their willingness to participate in the 2012 EAROPH International Congress and identified ways to further cooperate with the Presidential Committee on Regional Development, and Presidential Committee on Green Growth.

Visit by Dean of CSU for Special Lecture

Prof. Edward W. (Ned) Hill, Dean of Cleveland State University (CSU), was invited to present a lecture on April 29, 2011. In his lecture entitled "The Use of Economic Clusters in Regional Economic Development," Prof. Hill examined differences between the concepts of cluster economics and economics of agglomeration, focusing on the theoretical trends related to cluster economics since the mid-2000s as well as issues of cluster and regional development through the experience of Ohio. Prof. Hill is currently actively engaged in research on local



economic development and an honorary member of the Brookings Institution.

Director of Urban Plasma Delivered Lecture on Urban Regeneration of the UK



On March 17, 2011, the Center for Urban Regeneration Policy of KRIHS invited Dr. Yang Do-shik, director of Urban Plasma, a UK-based research center specializing in urban construction, to deliver a lecture on "Urban regeneration of the UK: aspiration of mega-region vs. the reality of local areas." In his lecture, Dr. Yang introduced urban regeneration policies carried out by the British Labour Party and delved into its policy execution of urban regeneration policies from the mega and local regions' perspectives as well as policy implications. In the subsequent question-and-answer session, participants actively discussed issues surrounding best practices of British urban regeneration projects.

KRIHS Participated in Conferences Organized by APMCHUD and UN HABITAT



Accompanying a delegation of senior officials from the Minister of Land, Transport and Maritime Affairs (MLTM), Dr. Kang Mi-na, research fellow at KRIHS, and Dr. Ha Soo-jeong, associate research fellow at KIRHS, participated in the Second Meeting of the 3rd Bureau of Asia Pacific Ministerial Conference on Housing and Urban Development (APMCHUD) held at the UN-HABITAT headquarters in Nairobi, Republic of Kenya, on April 10, 2011, as well as the UN-HABITAT's 23rd Session of the Governing Council held in Nairobi April 11-13, 2011.

The Second Meeting of the 3rd Bureau of APMCHUD was attended by participants from eight countries, including India, Indonesia, Iran, Iraq, Jordan, Korea, and Pakistan. During this meeting, the Korean delegation discussed the results of the Solo Implementation Plan adopted in the third APMCHUD held in June 2010 in Solo, Indonesia, and reported the latest



development and its future utilization of Korea's Knowledge Sharing Program (KSP), a demand-driven and performance-oriented comprehensive consultation project designed to assist development partnership countries.

In the 23rd Session of

the Governing Council of the United Nations Human Settlements Program (UN-HABITAT), focusing on "Sustainable Urban Development through Expanding Equitable Access to Land, Housing, Basic Services and Infrastructure," South Korea's head delegate delivered a speech entitled "The implementation of habitat agenda in Korea and future policy directions for its cities and housing." The sub-theme meetings and interactive dialogue sessions provided meaningful opportunities for Korean participants to further strengthen their international cooperation and exchange information in urban and housing sectors.

GDPC and World Bank Held Video Conference



On April 14, 2011, the KRIHS-affiliated Global Development Partnership Center (GDPC) held a video conference focusing on the current status of public housing in the Asia and Pacific region and knowledge sharing. The 3-hour conference was attended by the World Bank Headquarters in Washington and 10 countries from the East Asia and Pacific region of the World Bank. In the first presentation session entitled "Best Practices on Public Housing Policies," Dr. Jo Jin-cheol, research fellow of KRIHS, spoke about Korea's housing supply policy, introducing the overall development of Korea's urbanization process. This conference is the first in the Urban Knowledge Series organized by the department of the World Bank for East Asia and Pacific region and will be followed by a second conference in June.

NEWS & ANNOUNCEMENTS

Daegu to Host 2012 EAROPH International Congress



At a meeting held April 5, 2011, KRIHS selected Daegu city to host the 2012 EAROPH International Congress. During previously held presentations attended by KRIHS research members and relevant officials, including KRIHS President Park Yang-ho, Dr. Sagon Ho-sang, director of the GDPC, introduced the EAROPH International Congress while candidate cities, including Daegu and North Jeolla Province, made presentations on their willingness and effective preparedness to host the congress. Korea has already had plenty of experience in hosting EAROPH International Congress: Seoul in 1972 and 1990 and On-yang, South Chungcheong Province, in 2000. Daegu city was selected due to its extensive experience of hosting international meetings. EAROPH Korea will form a preparation committee with Daegu city, which will be in charge of the promotion and operation as well as the theme selection of the 2012 EAROPH International Congress.

Seminar on Creating Cities of Health and Longevity for Living beyond the Age of 100

On April 13, 2011, KRIHS's Research Center for Healthy & Longevity City hosted the seminar "Creating Cities of Health and Longevity for Living beyond the Age of 100." This event, which was a continuation of the first workshop in a series on "Creating Cities for Health and Longevity" held last March, aimed to examine recent developments pertaining to healthy and longevity cities and



discuss relevant issues. The seminar started with opening remarks by KRIHS President Park Yang-ho, followed by a keynote speech by Dr. Lee Si-hyung entitled "Life Medicine for Healthy and Longevity." Prof. Go Kawung-uk, Gosin University, and Dr. Kim Eun-jung, associate research fellow of KRIHS, subsequently made presentations on "Creating Cities for Health and Longevity to Fit the Korean Society," which were followed by active discussions among experts from various fields.

Professor Kustin Gothe Invited to Deliver Lecture at AURI



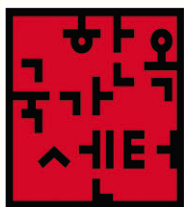
On March 28, 2011, the KRIHS-affiliated Architecture & Urban Research Institute (AURI) invited Professor Kustin Gothe, Karlsruhe Institute of Technology in Germany, to deliver a lecture entitled "Regional Development in German Rural Areas and Its Experience in Urban Regeneration." During her lecture, Prof. Gothe provided strategies for Korea to use in carrying out research on its urban regeneration and developing business models for urban regeneration,

based on Germany's experiences in the field. She pointed out that the essential components in regenerating urban areas include the importance of communication between local governments and their residents as well as local governments' independent and creative roles separate from the central government.

To succeed in urban regeneration efforts, she stressed that development should focus primarily on a central area and be restricted to suburban areas.

She also provided AURI and KRIHS with valuable and detailed information that can be used in Korea's policy direction for its urban regeneration.

AURI Opens National Hanok Center



auri
NATIONAL
HANOK
CENTER

On May 12, 2011, the KRIHS-affiliated Architecture & Urban Research Institute (AURI) held an opening ceremony for its National Hanok Center. The ceremony

was attended by approximately 90 guests, including Mr. Lee Sang-jung, chief commissioner of the Presidential Commission on Architecture Policy (PCAP), KRIHS President Park Yang-ho, Mr. Kim Cae-one, chairman of the National Research Council for economics, Humanities and Social Science (NRCS), and researchers from relevant institutes showing keen interest in Hanok or Korean traditional houses.

The event kicked off with the opening speech by AURI director Sohn Sei-kwan, followed by a congratulatory address by the chief commissioner of



the PCAP, a keynote speech by the Minister of the Ministry of Land, Transport and Maritime Affairs, and presentations on the introduction to the National Hanok Center and its long-term development plans.

Last May, six relevant authorities including the Presidential Commission on Architecture Policy and the Ministry of Land, Transport and Maritime Affairs (MLTM) submitted a plan for promoting a new Hanok center to the president, seeking to support policy development of Hanok, conduct a variety of pilot projects, and establish the National Hanok Center to systematically manage and provide information on Hanok. Against this backdrop, AURI proposed a research project regarding Hanok and set up a task force team, with financial support from the National Research Council for Economics, Humanities and Social Sciences (NRCS). It was decided that the National Hanok Center would be set up within AURI.

The National Hanok Center will serve as a think-tank promoting the Hanok culture, helping central and local governments establish policies and projects regarding Hanok, and providing information on Hanok to the public.

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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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