



# SPACE AND ENVIRONMENT

## SPACE & ENVIRONMENT

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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 quarterly by KRIHS.*

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## Development Plan of the South Coast "Sun Belt": A Stepping Stone for Establishing a New Maritime Economic Zone

### The South Coast "Sun Belt"- Reorganization of National Territory Towards Another Leap Forward

We are accustomed to thinking of the Korean Peninsular as the shape of a tiger, with a Cintamani Stone in its mouth. But look at the map upside down and you will have a different vision; a continental tip pointing toward the vast ocean. However, the nation's territorial development has been overly concentrated on inland areas while its great potential for ocean-bound growth has yet to be fully developed. For Korea to expand its competitiveness and cope with new challenges of a borderless global economy, a new ocean oriented development strategy is urgently needed.

Territorial competitiveness is an integral aspect of national competitiveness. Shaping a territorial structure suitable for the globalized era is one of the most important tasks for enhancing national competitiveness. The government's strategy to develop supra-regional belts is meant to meet that purpose. The burgeoning initiative's frontline is the South Coast. Since the 1980s, many expert groups including the Korean Society Studies have constantly urged development of the southern coastal regions, which can serve as a key gateway for Northeast Asia and abounds in ecological resources and valuable cultural assets.

With the South Coast Belt development plan, the nation is taking the first step toward forging new competitive strength through mega-city-region strategies. The mega-city-region has emerged as a new core geographical unit of global competition. The South Coast Sun Belt plan promises to bring economic prosperity and improve quality of living, core factors of the mega-city region concept. Additionally, it provides linking and packaging for various businesses-including tourism, seaport-based logistics, transportation and energy. By doing so, the development scheme will lead the overall territorial

restructuring necessary for the nation's second leap forward.

### Background and Objectives of the Supra-regional Development Zone

Today, transnational competition is ever intensifying through globalization and market opening, and global competition among mega-regions is becoming more important than that among nations in the world or among regions in a national economy. To better cope with this trend, countries are pushing megalopolization and decentralization simultaneously. The Korean government is also promoting a three-layered regional development policy to facilitate regions to maximize their growth potential. The policy revolves around 163 basic residential zones on regional levels (cities and counties), five+two mega regional zones and four supra-regional zones.

The supra-regional zones include the East Coast "Blue Belt" for energy and tourism; the West Coast "Gold Belt" for new industries; the South Coast "Sun Belt" ; and the "Peace and Eco Belt" for inter-Korean exchange and border region activities. More specifically, the East Coast Blue Belt will be developed into a green growth base centering on energy and oceanic tourism. The West Coast Gold Belt is envisioned as a Northeast Asian hub of international business and a cutting-edge industrial base. The South Coast Sun Belt will grow into a Northeast Asian economic hub focusing on marine tourism, logistics and industries. The Border Region Belt will become the world's sole peace and ecology belt.

The new territorial policy approach shifts away from a closed, inward-oriented development toward an open, outward-oriented development in response to economic globalization. The plan also tries to make the most effective use of the geoeconomic advantage of the nation surrounded by the sea on three sides. It also seeks to manage economic activity at a peninsular-wide level with a long-term vision to foster Korea as an open, outward growth axis in East Asia and the Pacific Rim.

### Visions and Strategies for the South Coast Development Policy

The South Coast has strong geographical and political advantages. First, Northeast Asia is the center of the fastest growing economic bloc and by

delivering its potential capabilities can join the ranks of the top 10 economic zones of Northeast Asia. Second, the region can be nurtured into a global logistics and business pole by accelerating industrial convergence. Third, it is a gateway allowing for simultaneous advances into the West Sea Rim, the East Sea Rim, the Pacific Rim and the continent. Lastly, it can become an international business center by capitalizing on its existing manufacturing, seaport logistics, tourism and resort bases, and settlement conditions. In this regard, the government has presented Northeast Asia's comprehensive economic center as the vision of the South Coast Belt. Key implementation strategies are as follows:

- Developing a global hub for tourism and leisure industries. With abundant resources in culture and arts, tourism and leisure, the South Cost region can become a hub for tourism and leisure activities.
- Forming a Northeast Asian international exchange pole. The government seeks to develop three economic poles around its economic free zones, build a comprehensive economic belt by linking them, and lay the foundation for cooperative businesses with neighboring economic zones in Northeast Asia.
- Promoting industrial convergences and links. The government seeks to nurture new growth engine industries through IBEC-Technology convergences and lay the foundation for high value-added agricultural and fisheries industries and local specialization.
- Establishing an east-west integration zone. The middle point of South Coast Belt bridges Yeongnam (Southeast) and Honam (Southwest) regions, symbolizing harmony and integration. The



government seeks to build the cities of technological convergence and cultural convergence as symbolic projects for mutual prosperity and reconciliation between the two regions.

- Expanding domestic and international transport networks. The government seeks to establish global transport links based on domestic wide-area networks that effectively connect maritime, aerial, rail and automobile transport modes. That would make any part of the South Coast Belt reachable within two hours.

To promote these strategies, the government plans a variety of development projects. They include high-quality resort and leisure towns in the archipelago, Hallyeosudo and Namdo regions. The archipelago region (Shinan and Jindo) will host maritime sports and leisure towns, vacation villas for foreigners and cruise ship harbors. The scenic Hallyeosudo region (Tongyeong and Yeosu) will feature international amusement complexes including tourism towns for foreigners and environment-friendly resort facilities. The Namdo cultural region (Gangjin, Wando, Boseong, and Hadong) will focus on eco-tourism including healthcare towns.

The government also plans to foster cutting-edge and higher-value-added industries such as aerospace, robotics, marine plant and oceanic life industry by linking them established ones in the South Coast Belt. Busan and Gwangyang ports will enhance their capacity as logistics-oriented harbors by forming hinterland complexes and expanding free-trade zones. In this regard, a Korea-China industrial cooperation town will be established, laying the cornerstone for expanding transnational cooperative businesses. To nurture agriculture and fisheries as strategic businesses, processing industry complexes will also be placed in some areas.

Gwangyang Port is geographically located in the

Figure: Global Tourism & Recreation Hub Scheme

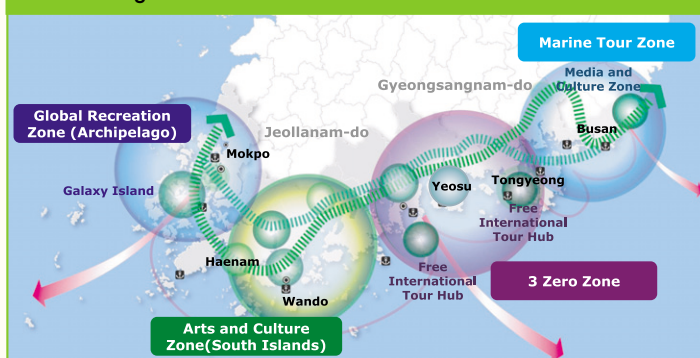


Figure: South Coast Economic Hub Development Scheme

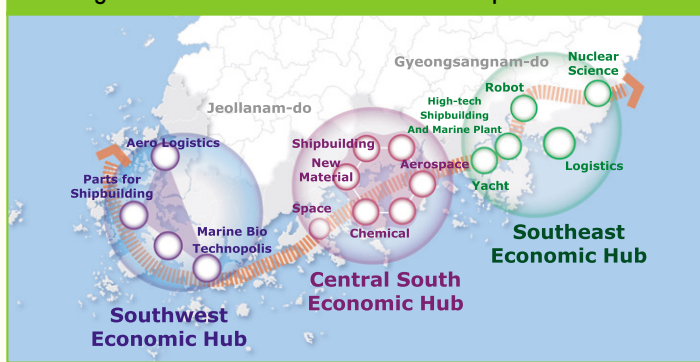
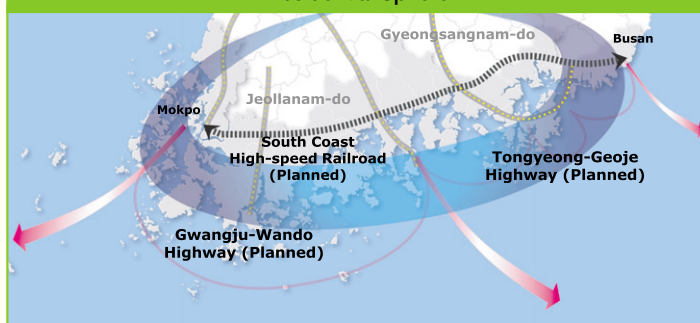


Figure: Transport Infrastructure for Building Integrated South Coast Residential Sphere



center of the South Coast region, the middle point between east and west. Cultural and technological cities will be established around it to promote regional integration. The cities will combine features of cultural and technology appropriate to the surrounding conditions. In preparation for the 2012 World Expo in Yeosu, tourism programs linked to neighboring areas will be offered and the area will grow into a new development pole

combing industries, culture and tourism.

To this end, the railway along the south coast will be converted into a double-track railway and will be linked to north-south and east-west corridors to altogether form square-type national high-speed rail networks. Inland highways as well as east-west bridges linking islands to mainland will also be constructed. The government will also push for cooperation with other Northeast Asian economic communities through establishing trans-border institutions like Korea-Japan joint organization to deal with straight management.

### **The South Coast Sun Belt: A Foundation for Future Marine Territory**

In order to successfully develop the South Coast Sun Belt for creating a new maritime economic zone, the government will ameliorate core regulations that hinder domestic and foreign corporate investment and will simplify planning and implementation process for the development. Additionally, it plans to create new organizations

and implementation systems to connect South, East and West coastal belts in a way that maximizes the synergetic effects.

Along with hardware aspects such as implementation strategies and comprehensive plans, the development requires improvement in software aspects such as foreign investment, regulations and costal landscapes. The South Coast Sun Belt will be a catalyst for the nation's future growth by attracting foreign investors, creating jobs and boosting regional economy. It should pave the way for building a second capital region with robust competitiveness based on diverse regional resources. That will move the national growth pole from the capital region at the center of the Korean Peninsula down to the south coast, expediting the establishment of a new ocean economic zone, and in the farther future the establishment of an ocean-oriented territorial structure.

*Kim Myeong-soo (mskim@krihs.re.kr)*

## **Spatial Planning for Creating Healthy Cities**

### **Obesity Epidemic**

Today, one in three of the world's adults is overweight and one in ten is obese. By 2015, the World Health Organization (WHO) estimates the number of chubby adults will balloon to 2.3 billion equal to the combined populations of China, Europe, and the U.S. (Global Post, Nov 25, 2009).

According to statistics of the Center for Disease Control and Prevention (CDCP), 33.8 percent of the adult population in the United States is obese, and 34.2 percent is overweight. By the same token, the population of obese<sup>1)</sup> persons in Korea has increased steadily over

the past 10 years; in 2008, the rate was 30.7 percent, and the annual average obesity rate of men showed a steep increase of 1 percent. Obesity in itself is classified as a disease as it raises the likelihood of a person contracting various adult diseases (cardiovascular disease, high blood pressure, diabetes, cancer, etc.).

Recently, many researches have indicated that built environments are highly related with all kinds of adult diseases and health problems including cardiac disease, high blood pressure, diabetes, respiratory disease, obesity, and depression. This trend has sparked interest in public health in the urban planning area. In particular, urban sprawl, the increase in private

1) Body Mass Index (BMI) is weight (kg) divided by the square of height (m<sup>2</sup>). When the index is equal to or more than 25, it is defined as overweight, and when it reaches 30, it is defined as obese. Since the obesity standard of the United States and Europe (BMI ≥ 30) is not applicable to Asian countries, Korea uses BMI ≥ 25 as its obesity standard (based on the standard of the WHO Asia Pacific Branch).



car-oriented commuting patterns, and the declining rate of pedestrian walks and greenery are seen as major causes of the rapidly surging obesity rate and adult diseases. Hence, urban planning academic circles in Europe and the United States attribute the cause of obesity and various chronic illnesses to built environments and are performing in-depth studies on healthy cities through interdisciplinary researches with health-related sectors. Compared to this, however, not enough efforts are being made by Korean urban planners and policymakers to create healthy cities in Korea. Against this backdrop, discussions need to be made regarding basic directions of spatial planning for creating healthy cities and measures for improving health and the public's quality of life.

### Basic Directions of Spatial Planning for Building Healthy Cities

#### *High-intensity land use for promoting physical activity*

Land use planning and restrictions are major elements related to the physical environment for building safe and healthy urban spaces. Boosting park ratios in residential areas can increase physical activities, which will reduce obesity and promote healthy living. Also, restricting buildings and facilities that are harmful to health such as fast-food stores and bars can lead to an improvement in the health level of citizens. Many previous researches have shown that such kinds of land use planning and restrictions are closely related to the health level of people living in areas where they have been implemented. According to research, urban sprawl is negatively related to the amount of walking that takes place and positively related to obesity and

high blood pressure. In addition, it was found that the higher the land use mix ratio and residential density, the higher the rate of walking and the lower the obesity rate. Also, facilities related to eating, such as food stores and vending machines around schools, are highly related to the obesity rate in children. Greendale, Wisconsin, in the United States is an example of the positive effects of urban planning. The region was designated a green belt zone that restricted land use, but the ceaseless efforts of urban planners and local citizens have transformed the place completely, and the town, now equipped with various convenience and recreational facilities, has been reborn. Currently, Wisconsin is celebrated as a health-friendly city as it attracts an aged population that places importance on pleasantness, safety, and the convenience of a residential complex.

In terms of land-use policies, a certain proportion of the residential area should be reserved for parks by law in urban center redevelopment plans or new town development plans, and restrictions should be placed on the establishment of fast-food stores that mostly serve high-calorie, low-nutrition food. In addition, recently, the Green Food Zone, which is being endorsed by the Korea Food and Drug Administration, has been institutionalized, restricting food-related facilities around schools and thereby preventing child obesity and unbalanced diets. This is a good example of improving public health through land use change.

#### *Creation of a basis for healthy green transportation*

The creation of safe pedestrian walks, bike paths, and more convenient public transportation induces

Figure: Car Only Road, Bike Path, and Walking Trail Alongside Dorim Stream



Source: Photographed by the author

individuals to walk or ride bicycles for transport, which can have a positive influence on public health. Previous research shows that accessibility to pedestrian walks, crosswalks, and public transportation have a positive relationship with the amount of physical exercise a person undertakes, which ultimately affects the level of obesity and health. In other words, to promote health, it is necessary to encourage the use of public transportation rather than private passenger vehicles and create pedestrian walks or bike paths to allow the public to freely engage in physical activities such as jogging or bicycle riding.

A good example is Charlotte, North Carolina, in the United States. The region achieved traffic calming through a road diet policy. It pushed up the amount of public walking beyond a certain level. Now Charlotte's traffic calming initiative is being benchmarked and driven actively in Austin, Texas; Bellevue, Washington; Eugene, Oregon; and Sacramento, California, as well. As part of the transport infrastructure plan, a bicycle infrastructure-laying project was undertaken in Arlington, Virginia. The city started implementing full-scale transport infrastructure policies by establishing Arlington's 1974 Master Bikeway Plan. Korea is also making and implementing various transport infrastructure plans. In the case of Seoul, 33.5 billion KRW was spent on restoring 11km of Dorim Stream into an eco-friendly stream, and installing car-only roads, bike paths, and walking trails alongside the stream. Seoul city can expect an improvement in public health through this project as it encourages walking and the use of bicycles.

### *Bold renovation of dilapidated houses*

Depressed residential environment and poor housing conditions aggravate human health. According to a three-year research to define the relationship between residential environment and mental health, members of households who moved to housing with satisfactory residential conditions from rental housing for the poor, demonstrated a significant decline in the levels of stress, anxiety, and depressive symptoms.

Obviously, it is hard to say the residential environment is the only factor influencing one's health since a residential environment is related to various socioeconomic variables such as the level of income, education, and occupation. Nevertheless, no one will argue that a plan is needed to guarantee a certain level of housing conditions for public rental housing where the low-income class resides mostly. For instance, there should be a set of guidelines that mandates a certain extent of park and open space ratio even in public rental housing complexes or other multi-family housing complexes for the low-income class.

Another solution would be to renovate buildings in slum areas instead of leaving them abandoned and supply them as residential complexes for low-income groups and the general public. For instance, Chemnitz in Germany has been revived through the renovation of common housing (Plattenbau), which has helped improve the public's health and quality of life<sup>2)</sup>.

Figure: Citizens Enjoying Canoeing on the Bronx River



Source: (Left) <http://www.bronxriver.org/index.php?pg=content&p=meda&m1=25&m2=29&m3=39>  
(Right) <http://www.bronxriver.org/index.cfm>

2) The primary purpose of the Chemnitz project was to rebuild the ruined city from war, but it came to affect the health and the quality of life of the citizens.

### *Creation of healthy waterfront space*

According to an analysis of the correlation between the degree of physical activity, obesity, and waterfront spaces in West Virginia in the United States, when there is an increase of one square kilometer of park space, the ratio of those not engaging in physical exercise falls by 0.01 percent, whereas with the same amount of increase in waterfront spaces, the ratio of those not engaging in physical exercise declines by 0.17

percent. This shows that the effect of waterfront spaces is 17 times the effect of regular parks.

A good example of improving citizens' health through renovation of waterfront spaces can be seen in Saint Paul, Minnesota, in the United States. The useless brown fields around Mississippi were transformed into a nature reserve, a green space for recreation. The Bronx River Greenway (BRG) project in Bronx, NY, is a project for creating 11.4 miles of eco corridors along the Bronx River to promote the outdoor activities of its citizens. It was implemented

**Table: Spatial Planning and Major Model Healthy Cities**

Plan	Area	Spatial Planning	Planning Result*	
			Before	After
Promotion of Physical activity and high-intensity land use	Greendale, WI	<ul style="list-style-type: none"> <li>Converted green belt into green space that is in harmony with surrounding facilities</li> </ul>		
Creation of the basis for green and healthy transportation	Charlotte, NC	<ul style="list-style-type: none"> <li>Calmed traffic by employing road diet</li> </ul>		
Bold innovation of dilapidated housing	Chemnitz, Germany	<ul style="list-style-type: none"> <li>Renovated war-torn common housing</li> </ul>		
Creation of health-friendly waterfronts	St. Paul, MN	<ul style="list-style-type: none"> <li>Transformed brown field around Mississippi into a nature preserve</li> </ul>		
	Bronx, NY	<ul style="list-style-type: none"> <li>Cleaned up waterfronts, changing them into recreational spaces</li> </ul>		
Creation of spaces in city centers to promote physical activities	Boston, MA	<ul style="list-style-type: none"> <li>Re-adorned abandoned playground into a recreational space</li> </ul>		
	Cleveland, OH	<ul style="list-style-type: none"> <li>Changed school playground into children's playground</li> </ul>		

\*Source: Bronx, NY ([http://www.bronxriver.org/puma/images/usersubmitted/greenway\\_plan/](http://www.bronxriver.org/puma/images/usersubmitted/greenway_plan/))

Cleveland, OH (<http://www.activeliving.org/files/MakingPlacesforHealthyKids.pdf>)

Chemnitz, Germany: (Left) by Uli Molter (researcher in the Department of Geography in Chemnitz University of Technology), (Right) by the author

Other pictures ([http://www.activelivingresearch.org/files/ALRPlanningMagazine\\_CaseStudies.pdf](http://www.activelivingresearch.org/files/ALRPlanningMagazine_CaseStudies.pdf))

together with the Bronx River ecology restoration project, with the purpose of restoring the ecological environment of the Bronx River, the greenification of waterfront spaces, and the transformation of the place into a health-friendly space. It was converted into a space where tourists or citizens seek to visit.

#### *Creation of city centers that promote physical activities*

There are many theories defining the relationship between the built environment and health (especially obesity) and physical activity.

Many theories testify that health is very closely related to the amount of a person's physical activity. In particular, a built environment that promotes walking, jogging, and bicycle riding plays a crucial role in the health of citizens.

Based on the above result, it can be concluded that creating charming streets people would enjoy walking along would promote walking. Also, renovating signboards in a community would help make the streets attractive. Boston, Massachusetts, is a good example of building a healthy city through the regeneration of its city center. Abandoned playgrounds in Boston were redesigned and rejuvenated into recreational spaces for the use of students and local residents. Also, in Cleveland, Ohio, the school playground of a low-income community was re-adorned and converted into a beautiful playground for children. Both projects are model examples of city

centers being transformed into congenial spaces and thence, into health-friendly communities.

#### **New Era of Healthy City**

Rather than referring to an absence of disease or illness, the word "health" refers to a state in which an individual enjoys high quality of life in terms of the physical, mental, and social aspects (WHO, 1946). As described earlier, the major causes of obesity and all kinds of chronic disease are the hereditary factor and the factor of built environments. Also, basic directions for building a healthy city were suggested, i.e., high-intensity land use, creation of a base for green and healthy transportation, bold renovation of shabby houses, creation of health-friendly waterfront spaces, and the creation of spaces in city centers that promote physical activities. We examined various cases in Europe and America to establish the direction of spatial planning for building healthy cities. Based on this, the basic direction of spatial planning applicable to Korea was suggested. Hopefully, this will contribute to building a new paradigm of urban and regional planning in Korea for the promotion of public health.

*Kim Eun-jung (ejkim@krihs.re.kr)*

## **A New Model of ODA: Technical Assistance of National Spatial Data Infrastructure for International Cooperation and Coexistence**

The Republic of Korea joined the Development Assistance Committee (DAC) with approval by all DAC member states at a special session held on November 25th, 2009. Since the founding of the OECD in 1961, Korea is the only country that has transformed itself from an aid recipient to an aid donor. On July 29th, 2010, the "International Development Act" took effect and the "Committee for International Development Cooperation (CIDC)," a body that establishes strategies of development aid and assesses the implementation of strategies, was founded accordingly. Then, two implementation plans

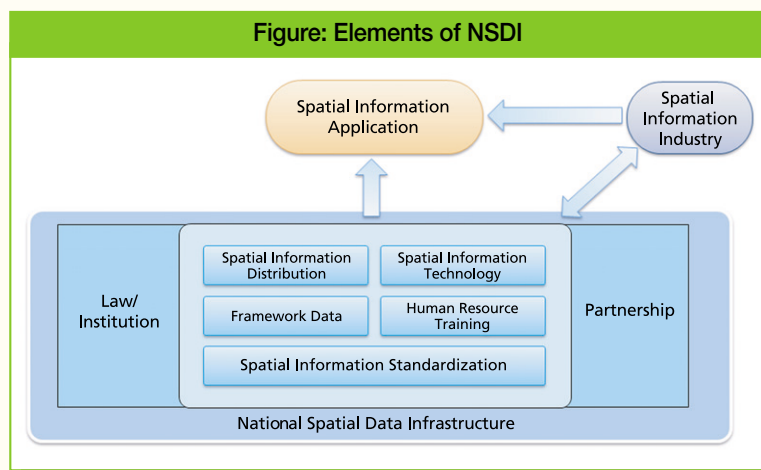
were established: a plan for an International Development Cooperation program, with the goal of providing aid on a 5-year basis; and its implementation program on an annual basis.

International Development Cooperation generally refers to Official Development Assistance (ODA). Taking various forms including gifts, loans, compensation and technical assistance, ODA is an actual transfer of economic resources intended mainly to promote economic development and welfare in developing countries. Among others, technical assistance can be more effective in terms



of long-term effects in that not only does it contribute to developing countries' economic development and welfare enhancement, but it also helps empower those countries to be self-sustaining and bring about competitiveness in related areas. Technical assistance is designed to enhance the technical capabilities of recipient developing countries, mostly offered through training, dispatching experts, providing equipment and materials, and establishing a development plan.

The Korea Research Institute for Human Settlements (KRIHS) has been establishing a master



**Table: Analysis of Cambodia's NSDI Conditions based on its SWOT**

	Strength	Weakness
Internal Capability	<ul style="list-style-type: none"> <li>Government's strong commitment to pushing NSDI</li> <li>Abundant workforce equipped with wage competitiveness</li> <li>Ongoing process of collecting and categorizing land parcel data</li> <li>Well-aligned organizations and clearly divided administrative system (central and local administrative structure)</li> <li>Flat land suitable for establishing infrastructure</li> <li>Unlimited growth potential</li> <li>Prospects of fast establishing infrastructure without impacting existing infrastructure because no national spatial information infrastructure has been established</li> </ul>	<ul style="list-style-type: none"> <li>Lack of standards and laws regarding NSDI</li> <li>Absence of NSDI policy and its supervisory control tower</li> <li>Limited budget for pushing related projects</li> <li>Absence of information &amp; communication infrastructure and related technology</li> <li>Wide information gap among regions and generations</li> <li>Lack of public usage of national projects and insufficient cooperation systems among ministries</li> <li>Absence of topographical and cadastral maps, and lack of statistical data</li> <li>Lack of understanding of NSDI by local governments</li> <li>Existing gap between central government and local governments</li> </ul>
	Opportunity	Threat
External Conditions	<ul style="list-style-type: none"> <li>Active technology and public funds supports from foreign countries</li> <li>Increasing utilization of NSDI and a growing demand in regions such as Siem Reap due to their buoyant tourism industry</li> <li>Higher economic growth</li> <li>Avoiding duplicated production simultaneously making cadastral maps and topographic maps</li> <li>Establishing technical schools specializing in surveying and map-making</li> <li>Growing number of the Internet users</li> </ul>	<ul style="list-style-type: none"> <li>Translation problems between the Khmer (the official language of Cambodia) and English</li> <li>Lower work efficiency due to high temperature and insufficient air conditioning systems</li> <li>Lower administrative efficiency due to absence of administrative computerization networks</li> <li>Vulnerable to the changing global economy due to high dependence on foreign aid</li> <li>Barriers to establishing IT infrastructure due to frequent floods during the rainy season</li> <li>Competition among ministries involved over authority</li> </ul>

plan for a National Spatial Data Infrastructure (NSDI) of Cambodia through the Korea International Cooperation Agency (KOICA) since April 2nd, 2010. The KRIHS-led project is not only designed to enhance Cambodia's economic development and public welfare as an ODA project, but also as a technical assistance project to disseminate Korea's advanced technologies to the nation. The initiative also helps facilitate establishing development plans that guide a direction for a national spatial information system and relevant policy development in Cambodia.

As a spatial data infrastructure, NSDI encompasses the technology, standards and human resources necessary to improve the process of acquisition, processing, storage, distribution and utilization of spatial data. This will help effectively build up and manage spatial data, which are essential to developing and managing national territory.

The Republic of Korea launched the first stage of the NGIS(National Geographic Information System) Master Plan in 1995. Since then, it has undertaken various projects of each NSDI element. They include establishing basic spatial information, enacting laws, making standards, and setting up systems for training professional workers and their

utilization. The 4th stage of the NSDI master plan, which started in 2010, has been formulated to ensure its policy continuity, and to continue to work on its utilization and improvement. Over the course of the last 15 years, South Korea has accumulated its own experiences and related technologies by strenuously planning and implementing its own NSDI.

The Cambodian NSDI Master Plan aims at analyzing the nation's current situation and then establishing basic directions and detailed plans of elements, fully utilizing Korea's advanced experience and technologies. Accordingly, implementing an NSDI master plan will help Cambodia establish its own spatial data more systemically and efficiently and detailed plans of spatial information standards can add more consistency and stability to Cambodia's spatial data system. Furthermore, the plan helps provide a foundation so that the nation itself maintains, renews and utilizes an established NSDI by planning to build up spatial data and train professional workers. Based on this foundation, supporting the utilization of spatial data and promotion of related industries will go a long way to activating spatial data system in Cambodia.

As part of the move, KRIHS dispatched relevant

**Table: Detailed Tasks by Stage for Promotion of Cambodia's NSDI Master Plan**

Elements of NSDI	1st stage of the plan	2nd stage of the plan
<b>Framework Data</b>	Setting up basic spatial data	Expanding the scope of establishment of basic spatial data
<b>Human Resource Training</b>	Nurturing skilled workers in the field of spatial data	More active in nurturing skilled workers in the field of spatial data
<b>Law and Institution</b>	Overhauling laws and regulations on spatial data	-
<b>Spatial Information Technology</b>	Developing a spatial data application system	Setting up a spatial data application system
<b>Spatial Information Distribution</b>	-	
<b>Spatial Information Standardization</b>	Laying the foundation for a standard system of spatial data	Establishing a standard system of spatial data
<b>Partnership</b>	Setting up a spatial data system (1st stage)	Setting up a spatial data system (2nd stage)
<b>Spatial Information Industry</b>	-	Promoting spatial data industry

experts to Cambodia from May to July 2010 for the purpose of examining the current status of Cambodia's spatial information system, then analyzing the inherent strengths, weaknesses, opportunities and threats.

The visions, goals, and strategies of Cambodia's master plan for NSDI were derived from the analysis of the current status of its spatial information system. The vision is "digitalizing territorial development and management," through which NSDI can be early established and its utilization can be increased. Given Cambodia's current information status and its financial situation, NSDI is to be divided into two stages and implemented in phases. The main purpose of the first stage is to "lay the foundation for NSDI" and the second stage concentrates on "expanding the foundation of NSDI and its utilization."

There are seven core strategies that will help set the path toward a successful NSDI in Cambodia.

- Setting up phased development plans for NSDI.
- Putting in place legal and institutional grounds for NSDI.
- Establishing a mutual cooperative system among ministries and regions.
- Establishing basic spatial information considering its utilization.
- Nurturing qualified specialists in order to push NSDI.
- Raising awareness of NSDI and expanding demand for spatial information.
- Building up Cambodia's self-capability in a way that helps the nation itself implement NSDI.

These seven strategies are the essential prerequisites for a successful establishment of NSDI in Cambodia.

Based on the visions, goals and strategies of NSDI, detailed tasks at each stage were selected. These are categorized into two stages, the first of which is to be carried out during 2010 through 2015. The second stage will cover the period 2016 to 2020.

According to detailed tasks, goals, strategies and road maps will be suggested and systems for implementing NSDI will be put in place, and then budgets for the plan will be assessed, all of which will help the nation implement the master plan in a more practical and concrete way.

Cambodia's move to establish its NSDI master plan has generated a growing interest in NSDI from other developing countries. Working-level

government officials of the General Department of Cadastre and Geography of Cambodia(GDCG) visited KRIHS this August to attend 10 lectures on NSDI. At the end of August, the acting director general and deputy director of the survey department of Myanmar also visited KRIHS to improve their understanding of NSDI.

Working-level officials of the Administration of Land Affairs Geodesy and Cartography of Mongol (ALAGaC) attended lectures on NSDI in October 2010 and senior-level officials including the acting director general and director general in November 2010. They showed a great deal of interest in both NSDI and Korea's master plan for a NSDI. Among developing countries, Mongolia and Kenya are seriously considering the establishment of NSDI.

Establishing a NSDI master plan may allow a nation to create guidelines on how to set up, manage and utilize spatial information, which serves as a basis of efficient territory and urban planning. It would also prompt developing countries to efficiently manage their spatial information, which in turn will lay the foundation for achieving a higher capacity to be self-sustaining in the long-term. Furthermore, Korea's support in establishing a NSDI master plan will showcase its advanced policy for national spatial information to the world, thereby enhancing national status and promoting relevant industries.

With the enactment of laws and schemes in relation to its accession to OECD/DAC, Korea is expected to increase its ODA. Significant technological advances in sensors of location information equipment (e.g., GPS) and mobile devices (e.g., Smartphone, Netbook) have spurred an increase in demand for spatial information. Therefore, instead of simply providing resources, supporting the establishment of a NSDI master plan will be a new viable model of ODA and offer a variety of benefits to both beneficiary countries and donor ones, contributing to international cooperation and mutual prosperity.

*Kim Kirl (kirlk@krihs.re.kr)*

*Jeong Jin-do (jdjeong@krihs.re.kr)*

## Housing Conditions of Disabled Persons

### The Current State of Disabled Persons

#### *The Current State of Disabled Persons in South Korea*

As of 2009, about 2.43 million people in Korea are registered as disabled, and the number is steadily growing. This is mainly due to an inflow of newly registered disabled people, an aging society, and a changing perception on being registered as disabled. The number of those registered as disabled is growing at an annual average of 10.9 percent since the year 2000.<sup>1)</sup> In terms of type of disability, physical disability makes up the largest proportion of 53.2 percent of those registered, followed by brain lesion disorder (10.4 percent), hearing disability (10.1 percent) and sight disability (9.9 percent). In terms of the degree of disability, those who fall under “degree 1 and degree 2,” (of the disability degrees from 1 to 6, degree 1 being the

most severe), constitute 24.2 percent of the total.

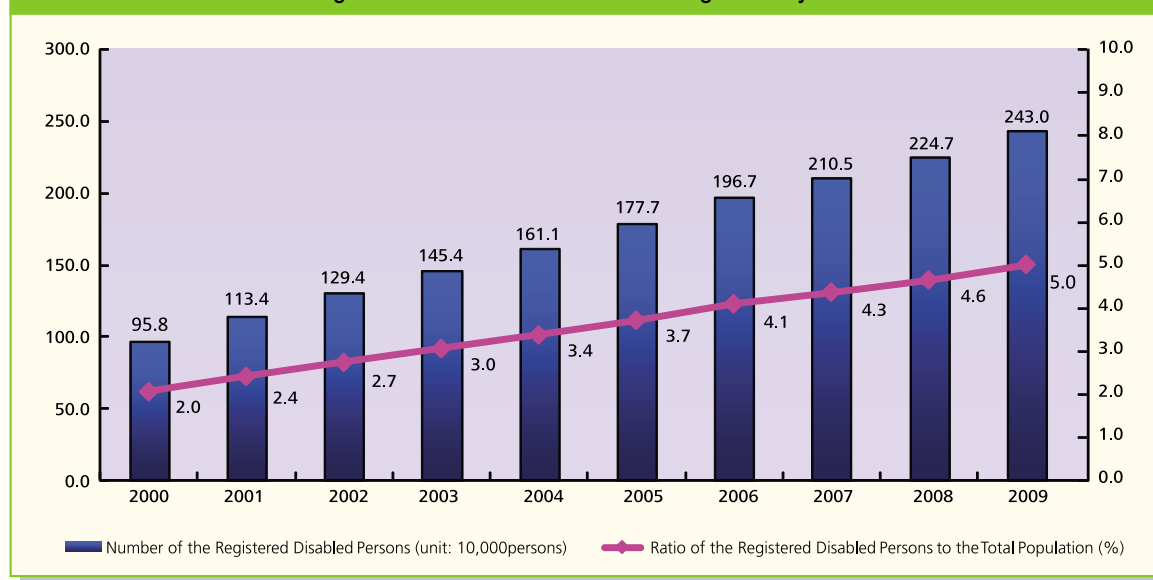
#### *The Korea Housing Survey 2009*

As the number of people with disability steadily increases, more attention has been paid to their housing conditions. Specifically, the Ministry of Land, Transport and Maritime Affairs and the Korea Research Institute for Human Settlements (KRIHS) jointly conducted a research project on the “Korea Housing Survey: 2009.” This was the first research of its kind for collecting basic data needed to identify housing conditions and establish housing welfare policies for the disabled.

### Housing Conditions of Disabled Persons

The research found that families with disabled members earned less income than the average of all

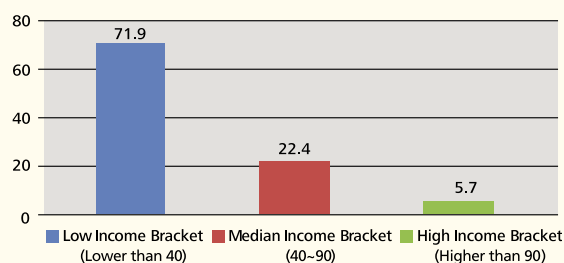
Figure: Number of Disabled Persons Registered by Year



Source: Number of the Disabled Persons Registered in 2009, Ministry of Health & Welfare

1) Source: Number of the Disabled Persons Registered in 2009, the Ministry of Health & Welfare



**Figure: Distribution of Disabled Persons by Income Level (Unit: %)**

Source: The Korea Housing Survey 2008, Ministry of Land, Transport and Maritime Affairs (MLTMA), Korea Research Institute for Human Settlements (KRIHS)

households in Korea. The disabled family member's ability to work was limited primarily because of physical or mental impairment, and the family had a higher level of living expenses. Regarding the income distribution of families with disabled members, a significant 71.9 percent were in the bottom 40 percent income bracket, compared to a mere 5.7 percent in the upper 20 percent income bracket. The monthly average income of families with disabled members was 1.47 million won (after tax), which is less than half

of 2.39million won, the average income earned by all households in Korea.

When asked about their housing conditions, about 59.5 percent of families with disabled members said that they own their house, compared to 56.4 percent of all households in Korea. However, the study found that 16.2 percent of families with disabled members paid monthly rent plus security deposit, which places a high burden on housing expenditure, and 2.2 percent of them paid monthly rent. These figures suggest that many families with disabled members feel the

burden of housing expenditure and insecure about their housing conditions. It should also be noted that the percentage of families with disabled members who live rent-free stood at 8.5 percent, much higher than that of 3.0 percent of all households.

Among those families with disabled members that don't own their house, 71.2 percent lived for more than 10 years without owning their house, which is significantly high compared to 49.0 percent of all households. indicates indicate that families with

**Table: Housing Units by Type of Occupation (Unit: %)**

Classification	Owned	Lump-sum Deposit only	Monthly Rent with Deposit in advance	Monthly rent	Monthly Rent for Lump Payment of the Rental Period in advance	Rent Free	Total
Nationwide(all households in 2008)	56.4	22.3	14.8	1.9	1.5	3.0	100.0
Nationwide(families with disabled members in 2009)	59.5	12.8	16.2	2.2	0.8	8.5	100.0

Source: The Korea Housing Survey 2008 · 2009, MLTMA, KRIHS

**Table: Period of Homelessness (Unit: %)**

Classification	Less than 1 year	1 to 3 years	3 to 5 years	5 to 10 years	More than 10 years	Total
Nationwide(all households in 2008)	9.4	13.0	10.4	18.3	49.0	100.0
Nationwide(families with disabled members in 2009)	1.5	5.1	6.0	16.2	71.2	100.0

Source: The Korea Housing Survey 2008 · 2009, MLTMA, KRIHS

**Table: Insecurity of Families with Disabled Members Living in a Rental House (Unit: %)**

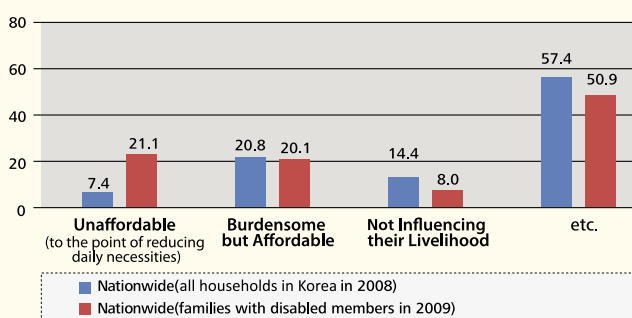
Classification	Very High	High	Normal	Low	No	Total
Being Evicted during Contract Period	9.8	21.3	22.5	21.2	25.3	100.0
Short contract Period	8.7	19.7	26.4	20.8	24.4	100.0
Rising Rent Costs	16.6	28.2	17.9	19.0	18.3	100.0
Being unable to Receive Deposit	7.0	14.1	23.5	24.1	31.4	100.0
Being unable to Rent Another House to live when Moving	13.6	25.5	20.1	19.7	21.1	100.0

Source: The Korea Housing Survey 2009, MLTMA, KRIHS

**Table: Rent to Income Ratio**

Classification	Median	Average
Nationwide(all households in Korea in 2008)	17.5	22.8
Nationwide(families with disabled members in 2009)	29.3	27.8

Source: The Korea Housing Survey 2008 · 2009, MLTMA, KRIHS

**Figure: Burden of Repayment of Loans and Rental Fees (Unit: %)**

Source: The Korea Housing Survey 2009, MLTMA, KRIHS

**Table: Affordability of Sharing Burden of Housing Improvement/Modification (Unit: %)**

Classification	Affordable	Not Affordable	Total
Nationwide(families with disabled members in 2009)	10.6	89.4	100.0

Source: The Korea Housing Survey 2009, MLTMA, KRIHS

disabled members have greater difficulty in purchasing their homes.

In terms of the median PIR (Price to Income Ratio), the average of all households stood at 4.3 times of the median compared to households with disabled members at 6.1 times, indicating that housing affordability of the latter is relatively lower than that of the former. Similarly, based on the median, the RIR (Rent to Income Ratio) of families with disabled members was 29.3 percent, opposed to 17.5 percent of all households. This suggests that families with disabled members suffer more from the heavy burden of housing expenses. With regard to loan repayment of housing expenses, about 21.0 percent of families with disabled members said that housing expenses place a heavy burden on them, limiting their abilities to meet basic needs. This figure is nearly three times higher than that of all households.

According to the study, a high proportion of families with disabled members felt insecure about living in a rental house. Specifically, about 44.8 percent of the respondents said they feel concerned about rising rental costs after the expiration of the current lease, and even though social perception toward disabled persons has changed, 39.1 percent said that they were afraid of not being able to rent another place to live.

The research also found that a large

Table: Year of Construction (Unit: %)

Classification	2000's	1990's	1980's	1970's	1960's	Before 1960	Total
Nationwide (all households in 2008)	27.9	38.7	20.2	6.6	2.5	4.0	100.0
Nationwide(families with disabled members in 2009)	22.9	40.3	20.1	8.9	3.0	4.8	100.0

Source: The Korea Housing Survey 2008 · 2009, MLTMA, KRIHS

number of families with disabled members live in houses in need of remodeling or repairs, but they couldn't afford to pay for these. Only 10.6 percent of the respondents said that they could afford to finance repair costs associated with their housing improvements/ modifications. With regard to housing units by year of construction, it found that 22.9 percent of households with disabled members live in houses built after the year 2000, compared to 27.9 percent of the average of all households while 16.7 percent of families with disabled members live in houses built before the year 1970, compared to 13.1 percent of the average of all households.

The government runs a variety of housing programs. However, most families with disabled members are not aware of these programs due to a shortage of publicity. Of those housing assistance programs, only 14.2 percent of those families are aware of the "Assistance of Housing Allowance" program and the others by less than 10 percent.

According to the survey, housing conditions of households with disabled members were relatively poorer than those of the average of all households. The survey also found that households with disabled members feel less secure due to their lower income and relatively higher level of housing costs burden, which would be more likely do so in the future.

Considering the difficulties in earning a living due to their physical and mental impairment and extra spending on medical expenses and aid devices, there is a limit to improving their housing conditions for themselves. Policy consideration for them also leaves much to be desired. For example, the current welfare policy provides diverse assistance services and delivery structures to target the disabled persons, whereas this is not the case in the housing policy.

Therefore, housing issues for disabled persons should be approached from a longer term and

comprehensive perspective and now is the time to set up long term strategies and devise related plans for welfare policies for the disabled persons. Furthermore, in order to further stabilize housing conditions for lower income disabled persons, political and institutional policies are necessary through which their housing cost burden can be eased and income security can be guaranteed. Housing costs place a high burden upon those households due to their lower income, leading to a need for physical support such as the provision of public rental housing together with income generating ways including creating or offering jobs for them.

To increase synergy effect of those policies, it is advisable to combine the government's assistance policies for the disabled with housing policies such as the provision of public rental housing. Similarly, there is a need to enhance the efficiency and effectiveness of policies by sharing information and delivery systems regarding households targeted for the policy and beneficiary households, and by formulating policies in the form of packages.

Before conducting this survey, it had been difficult to fully understand the housing conditions of the disabled household in Korea due to lack of proper statistical data. In this respect, the 2009 housing survey data is quite significant because it provides policy data on disabled persons' housing conditions based on regions, incomes and household composition and helps identify problems inherent in the current housing welfare system. Moreover, data derived from the survey can be used to help establish more sophisticated housing policies to meet the needs of disabled households.

*Kang Mi-na (mnkang@krihs.re.kr)*

*Kim Hyeon-jin (hyjkim@krihs.re.kr)*

## INTERNATIONAL COOPERATION

### KRIHS Signs an MOU with the World Bank



On December 14, 2010, KRIHS signed an MOU with the World Bank, attended by persons concerned including Dr. Park Yang-ho, KRIHS President and Dr. Somik V. Lall, Senior Economist with the Spatial and Local Development Team of the World Bank's Sustainable Development Network. The event came after the president of KRIHS and Dr. Inger Andersen, World Bank Vice-President for Sustainable Development, agreed to further strengthen relationship between both institutions in October 2010. By signing the MOU, they will conduct joint research and educating programs, hold seminars on green growth, and dispatch experts as a way to deepen bilateral cooperation in various fields. In line with the accelerating globalization, KRIHS will expand sister relationships with overseas universities and research centers to exchange information and talented people, which will in turn improve research performance and ensure its research activities further globalized and professionalized.

### KRIHS Meets with World Bank Vice President Inger Andersen for Scaled-up Cooperation



On October 25, 2010, KRIHS held a luncheon meeting with five members from the World Bank, led by Ms. Inger Andersen, World Bank Vice-President for Sustainable Development. Eight KRIHS members including Dr. Park Yang-ho, KRIHS President, were attended. The purpose of the meeting was to promote mutual cooperation between both institutions. At the meeting, KRIHS members introduced the institution to the delegates from the World Bank and they discussed how to enhance their mutual cooperation. Other key issues on the top agenda included promoting joint researches on national territory and infrastructure, holding international workshops, exchanging experts, engaging in joint projects, and signing MOUs.

### KRIHS-OECD Joint Seminar



On October 8, 2010, the Organization for Economic Cooperation and Development (OECD) and KRIHS held a joint seminar on "Compact Cities" in the KRIHS auditorium. Comprised of two sessions, the seminar aimed to share policies among OECD member countries and discuss future policy directions.

The first of the two sessions contained three presentations entitled Compact or Sprawl for Sustainability? : measuring the effect of urban form on travel behavior in Korea, the Environmental and Economic Impacts of Compact Cities and the Governance of Compact Cities.

Two presentations were given in the second session, entitled the Compact Regional Policy of île-de-France and Promoting a Transit-oriented City: Problems and Tasks for Korean Cities. Each



session was followed by in-depth discussions on identifying policies, challenges and countermeasures, and proposing comprehensive policies.

### **Invitation Program for Mongolian Government Officials**



On October 29, 2010, KRIHS invited government officials from Mongolia for training. A group of twelve people including Dr. D. Munkhtsetseg of the Administration of Land Affairs, Geodesy and Cartography under the Ministry of Roads, Transportation, Construction and Urban Development were participated.

KRIHS research fellows Dr. Shin Don-bin and Dr. Kim Kirl gave lectures on four topics : Korean spatial information policies; a circulatory system of its spatial information; the 1st to 3rd stages of the basic plan for the National Geographic Information System (NGIS); and the fourth stage of the basic plan for NGIS.

Mongolian government officials reaffirmed their commitment to using Korea's NSDI policy as a benchmark for implementing related projects in Mongolia. The two country's agencies promised to work together to train experts, exchange information on spatial data, and continue close cooperation.

### **International Seminar on Urban Regeneration Strategy Using Regional Key Resource**

On November 19, 2010, the Center for Urban Regeneration Policy of KRIHS held the International Seminar on the "Urban Regeneration Strategy Using Regional Key Resources." Consisted of two sessions, the seminar offered five presentations under the theme of Disarticulated Kingdom?: mobilizing key regional

resources in the southeast of England delivered by Prof. Nicholas Phelps (University College London); the Urban Regeneration Case in Germany by Dr. Dita Leyh (managing director of ISA-Stuttgart); the Process of Community Development in Mano-District, City of Kobe: district plan and social housing by Dr. Miyanish Yuji (representative director of Limited Company of Manoko); the Sustainable Urban Regeneration Practice in Puget Sound by Prof. Manish Chalana (University of Washington); the Achievement and Emerging Issues of Ten Years of Bukchon Regeneration by Prof. Jeong Se-ok (Kyunwon University). Chaired by Prof. Ohn Yeong-te (Kyunghee University), each session was followed by in-depth discussions with session attendees.



### **Conference on Mutual Cooperation with D4100 GSE Team from Mexico**

On November 23, 2010, KRIHS held a meeting with the D4100 GSE (Group Study Exchange) team from Mexico. The delegation was led by Mr. Guadalupe Navarro with members including Mrs. Claudia Cobieya, Mr. Ricardo Cortez, Mr. Marcelo Pelaez and Mr. JuanPablo Nava. At the meeting, KRIHS introduced itself and its national territory policies to those from D4100 GSE team and both institutions discussed measures to enhance mutual cooperation and issues and polices regarding urban development, which is one of the major interests of the Mexican institution. The meeting served as a good opportunity to share experiences in urban development between Korea and Mexico, and further enhance understanding of the relevant issues of each nation.

## NEWS & ANNOUNCEMENTS

### KRIHS Opens the GDP Center and EAROPH Korea



On December 30, 2010, KRIHS officially launched the Global Development Partnership Center (GDPC) and EAROPH Korea. The launch of the GDPC was driven by the current Korean administration which recognized the need for further establishing global human network as a way to promote the development of sustainable human settlements. Its goals are as follows: carrying out education and training programs for officials from developing countries; establishing national territorial and spatial planning for developing countries; consulting on national territorial development policies, planning and development cooperation. Other objectives to accomplish on a globe level are: the UN Millennium Development Goals; the balanced global development and sustainable globalization; the economic development and improvement of human settlements; development agenda for developing countries adopted in the G20 Seoul Summit.

The GDPC, importantly, will share experiences and knowledge in the field of national territorial development through education and training programs. As part of its training programs, customized training programs for government officials from developing countries are to be implemented all year round. A broad range of subjects of the programs includes national territorial and regional planning, infrastructures and urban development, housing policy and green growth.

With regard to the planning and consulting, the

GDPC will promote national territorial and policies by cooperating with various national research institutes in developing countries. Currently, the GDPC and the Vietnam Institute of Architecture, Urban and Rural Planning (VIAP) are jointly researching for Vietnam's urban development and planning using GIS (geographic information system). It has also devised a master plan for the establishment of the national spatial data planning for Cambodia.

To support these abovementioned programs, the center is seeking global partnership projects with Multilateral Development Banks (MDB) including the World Bank (WB), the Asia Development Bank (ADB) and the Africa Development Bank (AfDB). As part of this effort, the GDPC signed an MOU with the World Bank, on December 14, 2010, and is proceeding joint projects with developing countries and the MDBs to promote global development cooperation.

With regard to EAROPH Korea, on December 30, 2010, KRIHS launched EAROPH Korea Secretariat with a vision of establishing Green Growth and New Urbanization. In its endeavor, KRIHS will scale-up exchanges and cooperation with the EAROPH member countries. KRIHS will also support EAROPH Korea to effectively prepare for the 2012 EAROPH International Congress in Korea.



### KRIHS Received the "EAROPH 50th Golden Jubilee Award"

On October 31, 2010, KRIHS president Dr. Park Yang-ho attended the council meeting of the Eastern Regional Organization for Planning and Housing



(EAROPH), held in Adelaide, Australia. Dr. Park Yang-ho, who also serves as president of EAROPH Korea, played a vital role in EAROPH Korea winning the bid to host the 2012 EAROPH International Congress in Korea. Also, KRIHS received the "EAROPH 50th Golden Jubilee Award" for its support and contribution to

EAROPH. EAROPH is a non-government multi-sectoral organization focusing on consolidating and promoting a better quality of life, housing and planning in Asia, Australasia and the Pacific region.



### Training Program for Officials from Africa and Asia

As a pilot program of the GDP center, KRIHS held a training program under the theme of "National Territory and Regional Development Policy" for government officials from Africa and Asia from October 4 through November 12, 2010. Twelve trainees from 8 countries including Ethiopia, Tanzania, Côte d'Ivoire, Kenya, Uganda, Mongolia, the Philippines and Vietnam were invited to participate in the 6 week-long program.



It consisted of lectures, field trips, workshops and an international conference, as a way to share Korea's experience in dealing with its national territory and regional development policies.

### KRIHS and the Korea Herald Co-Published Book



KRIHS and the Korea Herald co-published a book titled "Korea's Territorial Policy, which is the first-ever publication that provides the past, present and future of the country's territorial development policies. It consists of installment from a year-long series which had run in the

English daily from September 2009. The book concentrates on introducing core projects the current Lee Myung-bak administration is pursuing, such as green energy, the bullet train network, the four-river project and the Saemangeum project. The book also will be used as a text book to educate people from developing countries and later will be translated into other languages including Chinese and Japanese.

### KRIHS President Receives "Best Leadership Award"

Dr. Park Yang-ho (KRIHS, President) was selected as the "best leader in the first half of 2010" when leadership of the presidents of the 23 national research centers under the National Research Council for Economics, Humanities and Social Sciences was evaluated. The leadership evaluation system is designed to lay a foundation so that these institutions will realize their visions and longer-term development plans as soon as possible, allowing them to become more advanced ones. As a result, they can enhance their policy contribution as national research institutions and proactively participate in the government's major policies and its priorities. Consisting of 11 people, led by Prof. Hong Ki-taek, Chung-Ang University, the evaluation team for the first half of 2010 assessed self-evaluation papers and survey questionnaires in the selection process.



Park Soon-up, Seo Yeon-mi, Yoon Ha-jung