KRIHS Gazette
January 2006, Vol.24

The Revision Plan of the Fourth Comprehensive National Territorial Plan

The Republic of Korea's Comprehensive National Territorial Plan (CNTP) is the nation's foremost comprehensive planning document to give direction to long-range territorial development of the country. The plan precedes other comprehensive plans by local governments, and sectoral plans should be initiated in accordance with the CNTP. There have been four CNTPs since 1972, and the latest plan for the years between 2000 and 2020 went into effect in 2000. However, the Fourth CNTP had to be revised due to numerous circumstances arising at home and abroad since the establishment of the plan, which are considered to critically affect the national territory. Some of the examples are as follows: the opening of the high speed railway, the Multifunctional Administrative City construction, the relocation of public agencies outside the Capital region, the 40 hour work week policy and the rapid rise of China.

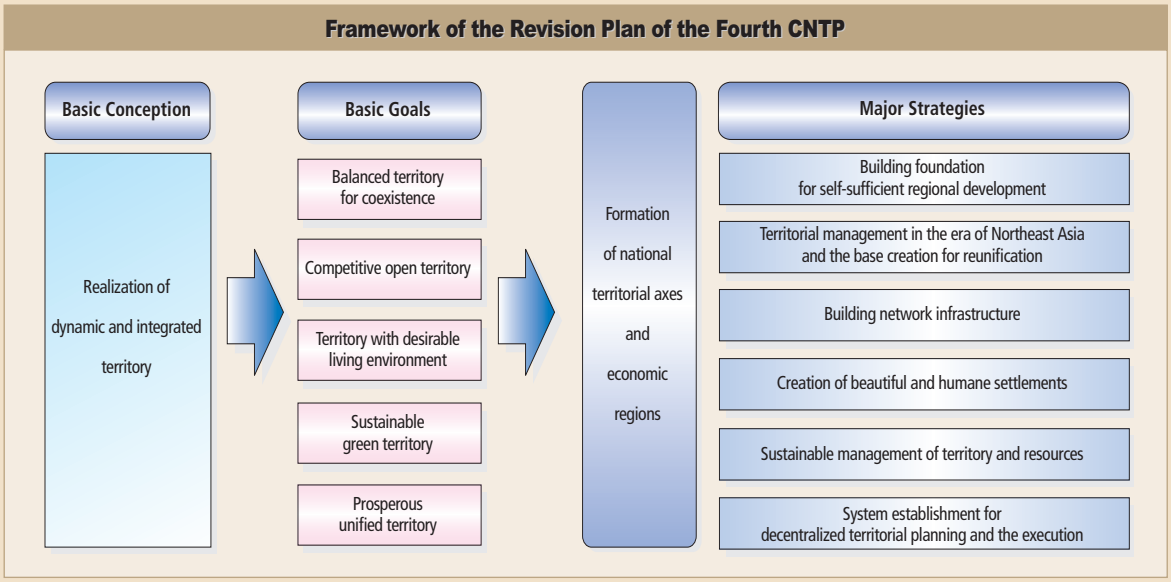
The main body of the CNTP establishment is the CNTP research team. This was initiated in March 2004 with the President of Korea Research Institute for Human Settlements chairperson. It is comprised of a total of 210 experts from all walks of life and is divided into 10 research divisions. The team has had a great number of meetings including meetings for research and consultations, sectoral discussions, public hearings and an international workshop.

Vision and basic goals

The revision plan covers the period from 2006 to 2020 and will go into effect January 2006. The plan envisions the realization of dynamic and integrated territory. It has set the following five as its basic goals for a balanced territorial development, strengthened competitiveness and humane territory: balanced territory for coexistence, competitive open territory, territory with a desirable living environment, sustainable green territory and prosperous unified territory.

Territorial development axes for achieving the basic goals are the three open territorial axes and the 'seven plus one' economic regions. Firstly, the three open territorial axes are South Coastal Axis, West Coastal Axis and East Coastal Axis. Each axis will be nurtured as a base for achieving the following different goals: the South Coastal Axis for strengthening marine logistics and industrial competitiveness towards Pan-Pacific Ocean, the West Coastal Axis for promoting growth engine based on international logistics and business, new industry and cultural tourism towards Northeast Asia including China, and the East Coastal Axis for advancing towards Eurasia and interacting between South and North Korea.

Whereas the three axes are steps towards openness, the 'seven plus one' economic regions are for decentralized and balanced territorial development. It aims to establish territory with multiple-nucleus and linking structure so that regional self-sufficiency and coexistence can be promoted. The regions are the basic territorial units of seven economic regions such as the Capital Region, Gangwon Region, Chungcheong Region, Jeonbuk Region, Gwangju Region, Daegu Region and Busan Region, plus one: Jeju Province. Each economic region will be nurtured as a basic unit for self-sufficient and internationally competitive



regions based on the specialized industries and the revision plan includes detailed plans prepared for each of the economic regions.

Strategies for basic goals

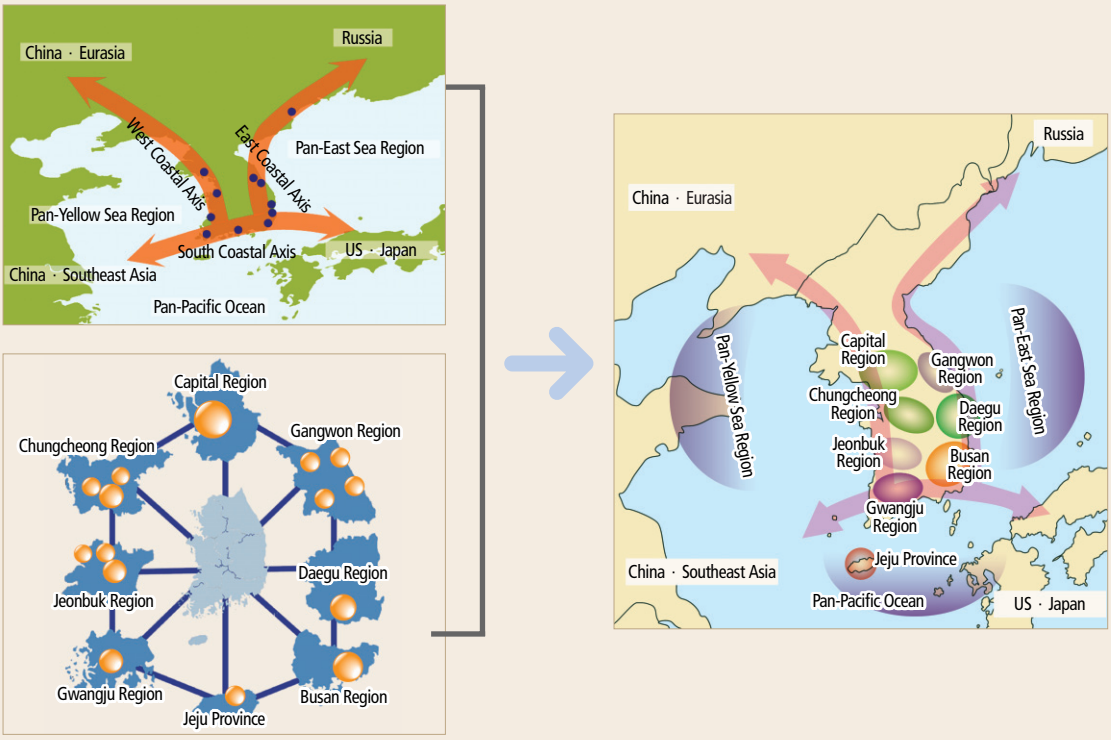
The revision plan has the following six strategies for actualizing the basic goals and the territorial axes: building a foundation for self-sufficient regional development, territorial management in the era of Northeast Asia and the base creation for reunification, building network infrastructure, creation of beautiful and humane settlements, sustainable management of territory and resources, and system establishment for decentralized territorial planning and the execution. Compared to the Fourth CNTP, the strategies of the revision plan further emphasize the importance of strategies for balanced territorial development. Other points it stresses are the welfare of the underprivileged such as the low-income group, and the old, weak and handicapped; open national territorial management strategies and the base creation for the cooperation between South and North Korea; and the importance of environmental and cultural factors in the territorial development policies.

Descriptions of each strategy are as follows: firstly, the major points the 'Building a foundation for self-sufficient regional development' tries to emphasize are Multifunctional Administrative City construction, relocation of public agencies outside the Capital region, Innovation City and Enterprise City construction, and the promotion of Free Economic Zone and Free International City. This is to decentralize functions of the Capital region and lay foundation for self-sufficient regions in order to achieve a balanced development of the national territory. It also suggests initiating Innovative Clusters for regional industries to achieve firstly competitiveness, secondly strategies for distinct development of each of the Capital region, major cities, small and medium-sized cities, and rural areas, and lastly, the development of differentiated cultural tourism according to regional characteristics.

'Territorial management in the era of Northeast Asia and the base creation for reunification' is a strategy aiming at two goals: firstly, the establishment of cooperative infrastructure for the creation of the Northeast Asian Development Cooperation and increased exchange within the Northeast Asia small cooperation regions such as Pan West Sea Rim, Pan East Sea Rim and Korea-Japan Strait region, and secondly, the base creation for inter-Korea cooperation. The latter is comprised of major points such as the Peace Belt building in the border region, cooperative development of Free Economic Zone in North Korea, and the joint management of the Baekdu mountain range and the natural resources of Korea.

'Building a network infrastructure' emphasizes most of all, the network of national transportation infrastructure, which can be used to easily access

Open and Integrated Axes of Territorial Development



transportation from anywhere in the country, and further link the world. In particular, the network building of high-speed arterial roads, the completion of the second phase construction of Geongbu high-speed railway line and the beginning of Honam line, and the promotion of the Northeast Asia hub airport and regional airport poles and large seaports are the major issues. Other issues include regional urban transportation, a national logistics system, safe and environment-friendly traffic system, effective financial investment in SOC, and the Ubiquitous territory with strengthened territorial information infrastructure.

'Creation of beautiful and humane settlements' stresses beautiful and livable urban environment especially for the underprivileged. Urban hierarchy will be restructured to a network type. As for housing, various types of housing will be provided in a stable manner by revamping housing policy into a customer-oriented policy. The settlement of planning-prior-to-development system, people's participation, enhanced cooperation between stakeholders and stability of housing market are other major strategies.

'Sustainable management of territory and resources' focuses on the establishment of environment-friendly territorial management system by constructing an evaluation and monitoring system for sustainable territorial management and the creation of a pleasant living environment. It also stresses such points as a stable water supply through water resource management by river basin, and strengthened capacity to cope with climate change and unusual climate events and integrated national disaster-preventive system for a disaster-resistant territory.

Lastly, the main focus of 'system establishment for decentralized territorial planning and the execution' is the governance for the enhanced enforcement capacity of the CNTPs. Decentralization, cooperation among stakeholders and the establishment of a conflict settlement system play the most important role in it. Another point is expanded participation of private sector, domestic and foreign, in investment as a way to secure investment funds and ensure the effective management of the funds.

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The West Coast Tourism Belt Development Project

Background

There has been an increasing demand for West Coast development as a new tourism axis in order to actively cope with the change in tourism patterns at home and abroad, and the spatial system change in the national territory for the construction of Northeast Asian hub. Strategies for the West Coast Tourism Belt (WCTB) Development Project is designed to provide new vision for tourism in the West Coast as an international marine tourism resort and promote balanced regional and national land development through tourism development in the West Coast area.

The target region is composed of a total of 20 cities and counties bordering the Yellow Sea in Gyeonggi, South Chungcheong, and North and South Chulla Provinces and takes up 9.3% of the country's total territory, or covers 9,269km^2. The West Coast region is a depressed area in terms of settlement base and economy except Gyeonggi Province. However, the region is expected to see rapid economic development in the near future with recent expansion in its SOC infrastructure and settlement base through such initiatives as Saemangum Reclamation Project, and the Enterprise City and new airport construction.

The West Coast region is a large linear coastal area stretching 340km north and south and adjacent to China. It has diverse and abundant tourism resources such as national parks and migrant bird sanctuaries. Its coastline stretches 14,110km, and has approximately 1,350 islands on it. Vast tidal flats on the coast take up more than 50% of the country's total flats, and the scenery is awesome. However, it is very difficult to differentiate each region due to common natural resources such as the ocean, coasts and islands.

Development strategies

The WCTB Development Project is to construct a tourism axis in the west coast of the Korean peninsula in preparation for the 21st century era of well-being. To actualize this vision, the project has developed the following development strategies: tourism development project by zones considering the cultural and natural characteristics of each zone, development of tourism hub and supporting tourist sites, development of tourism products with regional characteristics, pursuing sustainable tourism, strengthening tourism supporting system and infrastructure, step by step development and the establishment of the enforcement scheme.

Tourism hubs were selected among major tourist attractions or areas in the West Coast area considering the following criteria: accessibility, resource development potential, representativeness, possibility for large scale development, land use regulations, etc. Selected tourism hubs include Daechon-Anmyeondo, Saemangeum-Byunsan and Muan-Mokpo areas. Along with the selection of tourism hubs, several important tourist sites nearby were chosen as supporting tourist sites.

Diverse and abundant marine and coastal resources on the West Coast such as scenic islands, famed sunrise and sunset spots and lighthouses will be exploit-

ed and developed for tourism. Coasts and waterfronts will be developed to become competitive tourist attractions by adding to them multifunctional seaports and marina facilities for area-wide cruise, for instance. Efforts such as 1,400 Ree (approximately 560km) coastal drives construction and the beach maintenance will be made so that the coasts can be developed in an environment-friendly manner.

Community based eco-tourism will be actively promoted by designating superior coasts and mud flats as the model regions, and educational eco-tour programs will be further promoted. Cultural tourism will be also encouraged by developing tourism products exploiting historic, cultural and religious resources such as historic figures and sites of the region. The West Coastal food map will be also established. More than one day trip routes over several regions will be developed for connecting different tourism resources such as bird watching tours and food tours. Theme routes for one-day trips will be also developed such as a 'well-being' bicycle route in Gogunsando and historic and cultural experiences for families.

Hands-on experience villages will be created among farming and fishing villages. Various programs for a hands-on experience will be initiated and then intensively promoted as major tourism products. The process will be educated to the people in the villages, and the related tourism items will be consistently created by the community. Accommodations of low to medium price ranges such as auto-camps and youth hostels will be complemented and thereafter the service will be franchised. In addition, an integrated accommodation information system will be established in the West Coast region.

Major Tourist Attractions on the WCTB

The tourism industry will be connected with other regional industries by promoting strategic regional industries such as Asan Display Complex and the new Theme Industries. The marketing of regional specialties will be promoted through brand with regional images. Conservation areas and areas of restricted development will be excluded from the project so that environment-friendly development will not be disturbed, and development should be initiated in an environment-friendly manner within the development area. Besides, the guideline for coastal management will be drawn up and implemented.

Strengthening supporting measures

To facilitate the construction of the WCTB, several supporting measures must be taken. Firstly, it is necessary to expand the infrastructure transportation net-

work such as expressways, railroads, airports and seaports. Regarding this, especially the maintenance of general national road number 77 is urgent since it connects major cities and tourist attractions across the 20 cities and counties along the West Coast. Secondly, to promote tourism, strategies should be actively initiated such as the establishment of the integrated image of the West Coast, strengthened joint promotions and marketing, and establishment of various strategies for each individual target market. Thirdly, it is also important to have internationally known research institutes such as an institute for mud-flats and display facilities, and host relevant international conferences and exhibitions in order to attract tourists from around the world. Also, it is necessary to exploit relevant facilities and projects to make both West Coastal cities and strategic regional industries world-famous. In this way the West Coast can be promoted as an international tourist attraction. Lastly, laws and regulations should be improved to lay the foundation for area-wide tourism planning. Evaluation methods regarding the performance of planning promotions should be also devised, and the central government will have to play its role by strengthening its support for the WCTB development project.

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Housing Service Disparity among Regions and Classes in Korea

Housing service and housing indicators

This study is to support policy development for housing welfare that meets housing service needs of the people by thoroughly analyzing the housing service by region and class. Several policy issues have been raised after analyzing the country's housing service level by defining the notion of housing service and consequently setting housing indicators representing the housing service.

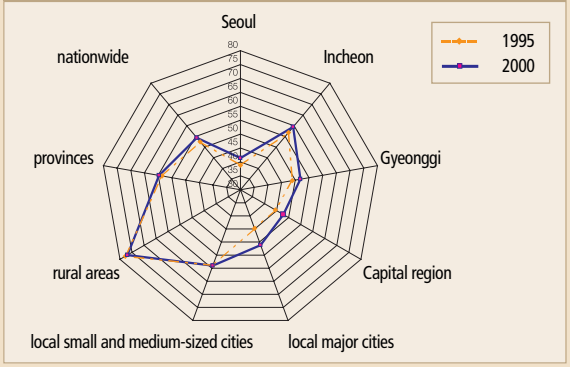
Housing service refers to the service households enjoy from housing consumption and it includes physical, locational, and environmental factors that a house provides. Indicators measuring housing service are classified into the following five categories: quantitative indicators (house supply ratio, owner occupancy ratio and per capita housing area), qualitative indicators (building age, ratio of single room with 3 or more persons, and degree of satisfaction with the housing), affordability indicators (housing price to income ratio and rent to income ratio), housing stability indicators (average period of residence and ratio of forced move), and housing equity indicators (Gini coefficient and Theil index).

Evaluation of housing service in Korea

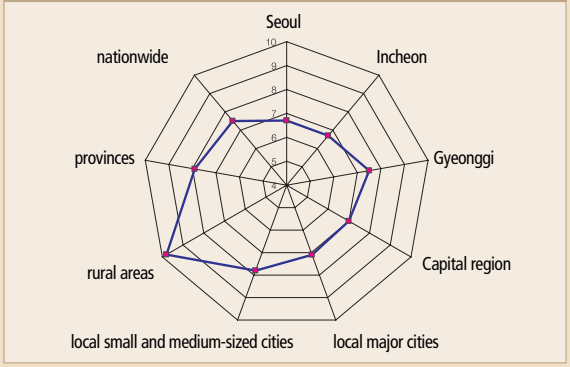
The massive supply of housing that has continued since the 1990's has led to a significant quantitative improvement in the housing service while such services as owner occupancy ratio and per capita housing area in and around metropolitan areas have not been easily available. The housing supply ratio has exceeded 100% marking 102.2% in 2004 whereas the owner occupancy ratio falls far behind the increase in housing stock with a slight increase to 54.2% in 2000 from 49.9% in 1990. This shows that the massive supply of houses aimed to facilitate the purchase of an ordinary house for self use, has benefited households that have housing affordability instead of non-homeowners. As for the per capita housing area, this has gradually improved with the percentage standing at 24.8m^2 in 2005; however, this is far lower than that of the U.S. (68m^2) and Japan (66m^2).

While the quality of the housing service is improving in general, there is a significant discrepancy among regions. Whereas the housing supply has increased due to the continued massive supply, the housing environment has remained unsatisfactory. Building age, as an indirect indicator that shows how much a building is deteriorated, stands at 15.8 years on average nationwide while people in rural areas reside in houses more than 20 years old, and the lowest 10% group lives in houses 26 years old on average. Among households with more than 3 household members, the ratio of single room households is improving to 1.6% in 2005 from 4.4% in

Owner Occupancy Ratio by Region



Per Capita Housing Area by Region (2005)



1995. People in rural areas and low-income groups are highly unsatisfied with their housing condition and housing environment. In particular, senior citizen households have expressed a high level of discontent with almost all categories of qualitative indicators, raising the need for enhanced housing policy for senior citizens.

In terms of housing cost, costs for housing purchase are high in the Capital region while the rental burden is high in rural areas. This results from the high housing price in metropolitan areas and low income in the provinces. As for the median term, the housing price to income ratio (PIR) of Seoul is 7.7 times and Gyeonggi 4.5 times while small and medium-sized cities in the provinces are 2.6 times. The rent to income ratio (RIR) is 23.0% in rural areas representing the highest percentage, followed by Seoul (21.0%) and small and medium-sized cities in the provinces (14.1%). In particular, the rental burden of low income groups and senior citizens takes up 30% of their total income.

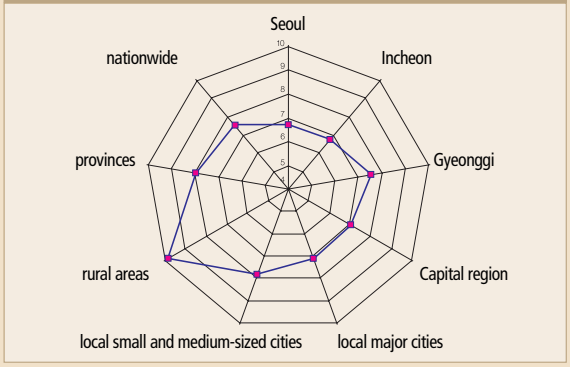
Housing stability is higher in rural areas than in cities, and tenant households and low income groups have lower housing stability than households that are owner occupied. The average period of residence is 5.4 years in Seoul compared to 15.7 years in rural areas. Owner households have an average period of 11.7 years of residence, whereas that of tenant households is 3 to 4 years. The ratio of forced moves, which represents moving due to increased housing cost or at the house owner's request, is 12.2% in Seoul, and 13.9% in small and medium-sized cities in the provinces. That of low income groups is high representing 13.9%, and in particular that of the lowest 10% group is as much as 22.1%. Compared to the U.S. (6.1% in 2003) and the U.K. (5.5% in 2003), the ratio is much higher, and this shows that the house instability of low income groups of Korea is comparatively high.

Housing equity of housing assets, household income and housing costs, excluding per capita housing area, is highly unequally distributed. In particular, the Gini coefficient of housing assets and PIR are very high indicating 0.56 and 0.51 each, and household income and RIR are also very high, indicating 0.43 and 0.40 respectively. In contrast, the per capita housing area of Seoul is comparatively low at 0.32. Low income groups have a high degree of inequality in every sector including per capita housing areas, housing prices, monthly household income, PIR and RIR. The results of the decomposition of inequality within and among groups by means of the Theil index show that in terms of per capita housing areas, the inequality factor within regions is significant while the inequality factor among groups is significant in terms of income, tenure, age and housing type. The results show that the minimum housing standard should be applied to achieving a housing welfare of the lowest income group. Especially, when the discrepancy among

Current Status of Owner Occupancy Ratio

	Japan(2003)	U.K.(2003)	Netherlands(2002)	U.S.(2003)	Canada(2001)
%	61.2	71.0	54.0	68.3	65.8

Average Period of Residence by Region (2005)



regions is larger than that within regions, policies for balanced regional development should be established on the central government level, and if the discrepancy within regions is larger, internally differentiated policies should be initiated on the local government level.

Policy implications

In conclusion, for the promotion of housing welfare, the first step is to conduct consistent statistical surveys to identify the actual conditions of the housing service. Based on this, the government can identify housing service discrepancies among regions and classes and accordingly implement customized policies corresponding with each individual household's needs. In metropolitan areas, policies are required that are aimed at a stable housing supply and a stabilized housing price. In provincial cities, policy support is required to improve the quality of the housing service by improving housing conditions and the housing environment. Housing welfare policies should be established especially for low-income households and senior citizen households in the major cities.

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Strategies for Realizing GIS-Based Disaster-free Territory

It is impossible to completely prevent meteorological disasters from occurring but they can be mitigated through preventive efforts. In particular, the rapid development of information integration and GIS analysis technology in recent years is contributing to the efforts by offering an environment where data in a complex world can be managed, analyzed and simulated in a computerized environment. These technologies are also used for scientific spatial decision support systems.

Korea, like everywhere else in the world, has experienced serious natural disasters and man-made disasters more frequently in recent years and to cope with these disasters, Korea has had a disaster management system in place. However, the system has been focused on post-disaster recovery measures rather than proactive measures. There has been only a rough-and-ready system to manage and rehabilitate disaster areas, and the fundamentals of disaster management such as a comprehensive disaster prevention system, or plans that include preventive and rehabilitation measures in addition to the management of disasters are absent in the country.

Disaster information management and GIS

To construct an advanced national safety management information system for systematic disaster prevention, which allows for preparation, prompt response and rehabilitation after disasters, the government plans to build a comprehensive prevention system based on the GIS system, and the central and local safety management centers along with local governments, will share the system for the prevention of disasters in their areas.

It is not easy to collect spatial information of various kinds though it is crucial for constructing the disaster prevention system. However, the rapid development of information technology has provided an environment where data of the complex real world can be systematically managed. In particular, GIS technology allows the management, analysis and simulation of disasters since it makes it possible to integrate a large amount of space information, and it is used as a scientific spatial decision support system in various fields including disaster prevention. The GIS and other types of information technology can be used for disaster pre-

vention as a very useful tool, since various kinds of decision must be made to precisely predict and prepare for disasters by those who perform analysis and management of spatial information related to each disaster.

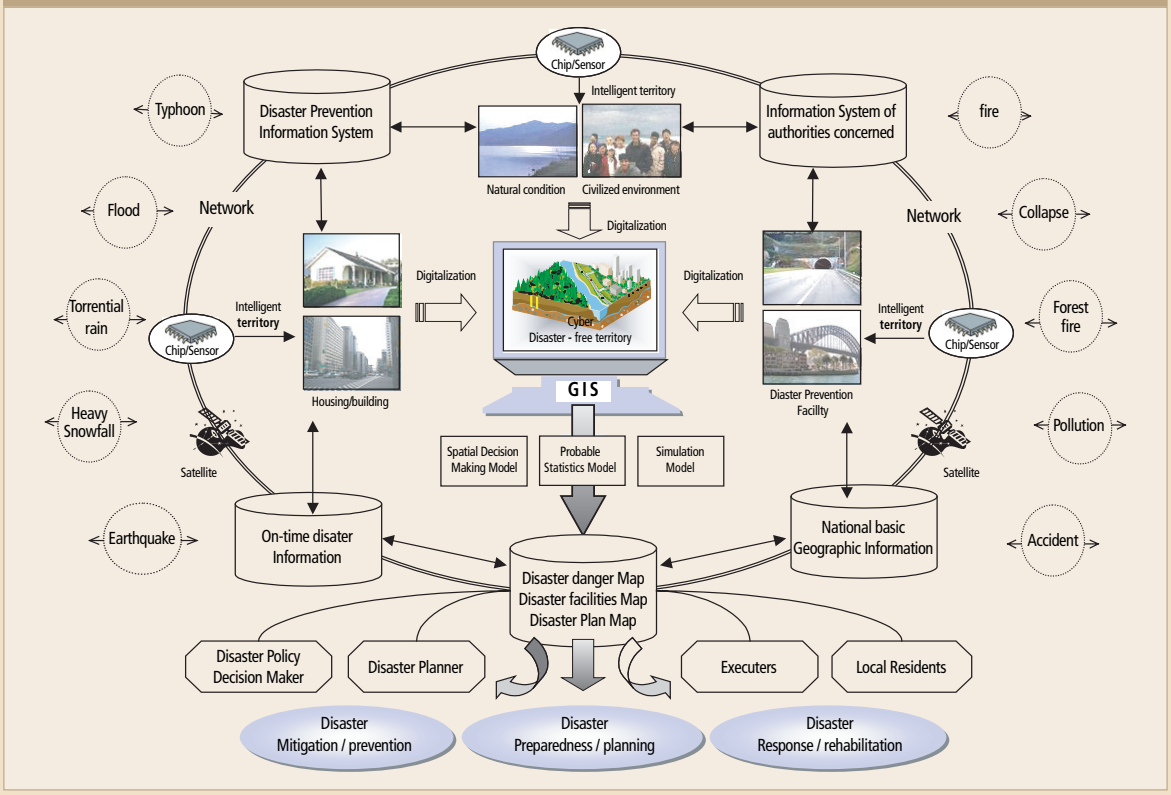
Recently, 3D GIS, which is easily combined with other high-tech information technologies such as the Global Navigation Satellite System (GNSS), Intelligent Transport System (ITS) and Satellite Imagery Information System (SIIS), is widely used for disaster prevention to examine disaster-affected areas. Another is the simulation technology for complex disaster situations, which is developing considerably as the operation of various data and the analysis environment is improving. Diverse components related to disaster occurrences such as hours, cost, environment and procedures are modeled, and then transformed into kinetic components. This is the technology that is used to evaluate and understand the model, and it can be used to cope with disasters and construct disaster prevention systems.

In addition, it is important to review the feasibility of adopting Ubiquitous technology in that the technology constitutes one of the paradigms used for disaster prevention in the information and communication industry. Accurate prediction and measuring of the time and space of disaster are important for disaster prevention operations since it allows for the creation of the environment where real-time information acquisition and speedy responses to and preparation for disasters are realized with Ubiquitous technology in disaster prevention sectors.

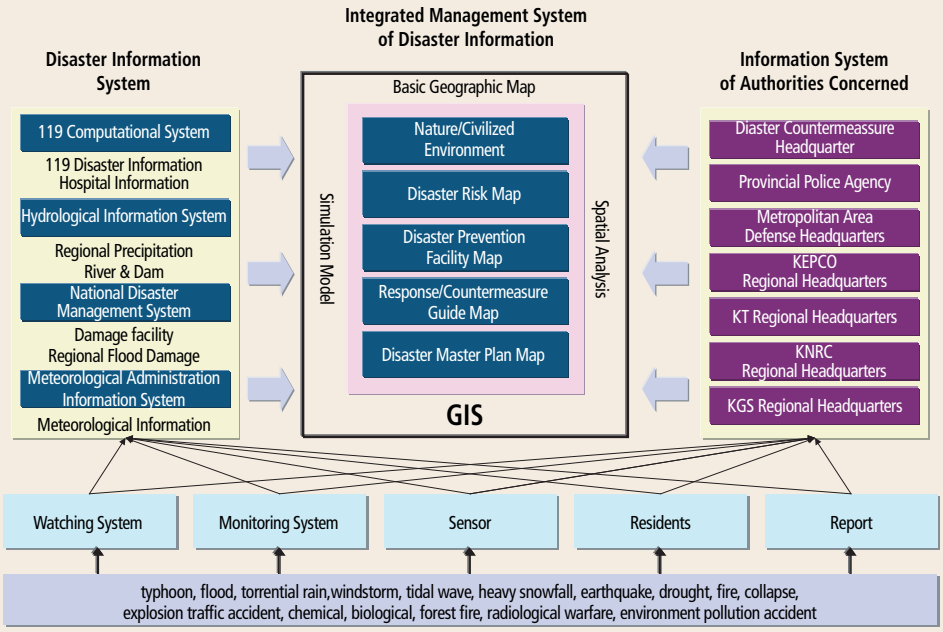
Direction of GIS-based disaster-free territory

To minimize damages from natural disasters and to accomplish disaster-free or disaster-resistant territory, measurements that are comprehensive and analytic should be established. A disaster-free territory is closely connected with the environment as well as people's lives and properties. Thus, it is important to implement the disaster prevention system based on the GIS environment in order to enable people to coordinate measures for disaster prevention with the environment. New technologies such as the GIS, ICT

Concept of GIS-based Disaster-free Territory



Integrated Management of Disaster-free Terrifory Information



and Ubiquitous technology, support an environment where disaster-free territory can be obtained by means of science and intelligent technology.

To realize a GIS-based disaster-free territory, the first step is to integrate the management system of disaster-free territory-related information. Organizations involved in disaster prevention efforts and local governments are making every effort to obtain this goal by effectively managing disaster prevention information. However, information related to disaster prevention has been separately collected by different organizations so far, and information can be effectively used only when it is integrated into one system in the GIS environment.

Disaster prevention information should be integrated into one system with different organizations involved organically linked with each other, and should be jointly managed by different organizations including neighboring local governments. And information that is to be used to predict disasters should be collected to come up with plans and measurements for disaster prevention. In addition, to obtain and manage accurate real-time information, new technologies should be adopted. And since the operation of disaster-free territories is directly involved in national security, information on possible fires or explosion in buildings such as facilities and major infrastructures for security should be included and managed in the disaster-free territory database from a security perspective.

To perform stable and effective disaster prevention operations in every part of the territory including cities, rural villages, rivers, seashores and mountains, a cyber disaster-free territory system should be constructed by digitalizing real world topography and social artificial environments. A cyber-geospace establishment is necessary to construct a cyber disaster-free territory system, and this can be achieved by adopting a variety of spatial information such as topographic information and artificial satellite images using virtual buildings and 3D-GIS. The monitoring system for real-time management of disaster conditions through intelligent national territory is another strategy for disaster prevention. Some examples of the strategies used to achieve a GIS-based disaster-free territory are the systemization of knowledge by establishing a disaster prevention database; developing disaster simulation models and systems; adopting Ubiquitous technology; and coming up with a master plan for disaster prevention.

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Construction of Standardized Node/ Link for ITS Information Exchange

When two or more transportation information collection systems exist in a region, either node/ link IDs of one system should correspond to those of other systems, or mapping should exist that allows them to correspond with others. This is to obtain information compatibility among systems. However, Korea has not secured compatibility yet because the node/ link IDs on its transportation network are being developed, designated and operated individually by different Intelligent Transportation System (ITS) project initiators, thus causing difficulties in information exchange.

Thus, there has been the consensus that node/ link standardization is necessary to deal with inefficiencies arising from repeated investment in information collection system establishment which will consequently facilitate transportation information exchange. The Ministry of Construction and Transportation has initiated the ITS standard node/ link Database (DB) construction to address this problem. The project is part of the National ITS Standardization Program of Korea. In addition, the ministry developed and distributed "ITS standard node/ link construction and operation guidelines" in December 2004, to establish standardized node/ link ID system. The guideline describes procedures such as standardized node/ link ID system formation and methods to give node/ link IDs, establish standardized nationwide road node/ links, input basic information and inspect, store and provide data. It also describes how to manage the standardized node/ links. In July 2005, the ministry published an instruction book of the guideline for those who actually work on the DB construction. It contains the introduction to and the directions of the guidelines, and the application method.

Contents of standardized node/ link

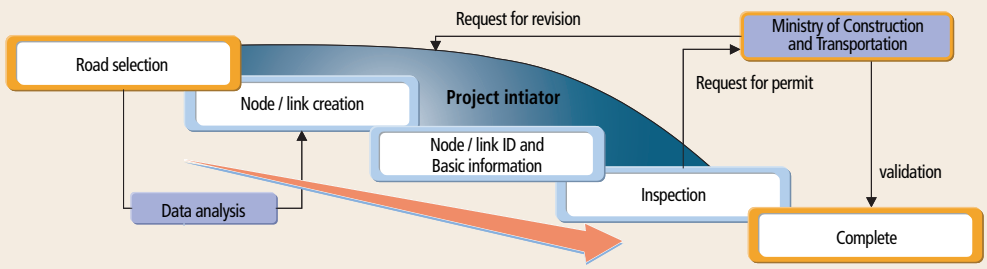
The standardized node/ link ID system consists of 10 digits, with the first three numbers zone numbers signifying the area of the concerned node/ link. The following five are serial numbers, and the rest are extras, which are prepared for future changes or division of road network.

Zone numbers of nodes/ links are given according to the zone number of each individual district, city and county as directed in the guidelines. In case districts, cities or counties are created after administrative integration or divisions within metropolitan cities and provinces, extra zone numbers will be used for them, following the approval from the Ministry of Construction and Transportation. When a node or link overlaps over more than two zones, the ID is given preferentially to the nodes/ links of lower latitude and longitude. The serial number IDs of node/ link are designated by adding a positive number to the previous number, in order and by zone, starting from number one, and there should be no overlapping or omission in the designation. The ID is given in ascending order from areas of lower latitude and longitude.

The extra IDs are given the extra numbers according to the guideline regulations when the nodes/ links of the existing standardization system are divided or integrated due to the construction of or change in intersections. When the existing node/ link must be scrapped due to reasons such as transportation network change, the concerned node/ link ID is to be deleted so that it is not used again, and the relevant information is to be managed separately. Basic information is to be input after node/ link IDs are given. The information consists of node information and turn information. Node information is on the location where traffic flow changes such as intersections and the start and end points of a road, and is comprised of node ID, type and name and information on whether the turn limit exists or not. Turn information consists of the start and end link ID related to the node, and type and operation type of turn limit.

Basic link information is comprised of link information such as the name and type of road section and the road structure, and additional information of attribute information, which has to be put in the shared section of a road with several numbers and names. Link information is attribute information which is on the link of a road section that links two nodes, and consists of the link ID, the start and end node ID, road type and whether the road is used or not. Additional link information consists of attribute information such as link ID, mean section ID and road class, type, number and name. Among them, road class, type and number are the necessary infor-

Procedures of Standardized Node/ link DB Construction



mation for the operation and management of standardized node/ link for immediate recognition of the circumstances at the road opening or change.

Method and process for construction of standardized node/ link

The DB is constructed for the whole section of expressways, national highways and provincial roads, and more than 10-meter wide roads with a center line, one way roads with more than two lanes including roads connecting to expressways, national highways and provincial roads, and interchanges. Additional databases can be built for roads which do not meet these criteria when the construction initiator concerned decides upon it. The National GIS Numerical Topographical Map, which was recently released by the National Geographic Information Institute, National Transportation DB, completion reports on road location and shape are available for reference. Road reports and road facilities management reports can also be used for the input of the node/ link attribute information.

To construct the standardized node/ link DB, a node is designated at road points such as intersections, the start and end point of roads, traffic control points, the changing points of a road structure, administrative district and road operation, and road entries and exits, and points considered suitable as a node by the ITS project initiator. Road center lines are established by linking nodes along road sections, and they are used as the basic data for link direction by direction. Based on this, they are offset by a certain interval by direction, and then links are created which are in line with traffic flow. When links created by the center line offset do not reflect the real shape of roads, the link shape can be revised.

When nodes and links are created, 10-digit IDs are given to the node/ link, and basic information such as node information, spin information, link information and additional link information are input. When node/ link IDs are created, inspection is conducted on the construction results. Once inspection is complete, ITS project initiators submit the results to the Minister of Construction and Transportation by means of the standardized node/ link management system, and ask for the permit to use. Construction results meeting the permit criteria are reflected on the integrated DB and the use permit is notified at the same time. Then, they are made available for pubic purposes and traffic information distribution. The procedures of standardized node/ link DB construction are shown in the diagram above.

Management of standardized node/ link

In principle, node/ link IDs of expressways, national highways, provincial roads and roads that connect these roads in the standardized node/ link DB established, are collectively given by the Minister of Construction and Transportation. However, node/ link additions and changes, and the management of attribute information are performed by different bodies depending on the road: the Korea Highway Corporation for expressways, the President of Regional Construction Management Office for national expressways, provincial governors for provincial roads under jurisdiction, and the main construction body for connecting roads. As for cities, counties and provinces, the mayors of capital and metropolitan cities and other cities, and the governor of counties and districts will take charge of the construction and management. Under special circumstances, the provincial governor of the city and province concerned, or the mayor of the central city in the neighborhood can take the place in collaboration with the Ministry of Construction and Transportation. The

node/ link management of privately operated traffic facilities is performed by district offices that grant the operation permits to the facilities. Any possible changes in the standardized node/ link must be reported to the Ministry of Construction and Transportation one month prior to changes, and the standardized node/ link must be revised at the same time.

With node/ link construction, citizens will be informed of nationwide traffic information and that is expected to further accommodate people's convenience, especially at a time when the sphere of life is ever widening, and the five-day work week policy is taking root. As for businesses pursuing profits using traffic information, they are expected to avoid inconveniences arising from multiple contracts, and will consequently save maintenance expenses and other costs.

As for the nation, the construction is expected to benefit the economy by avoiding repeated investments and by activating businesses related to traffic information. Also, thanks to the construction, Korea is expected to climb much closer to the national goal of becoming the Northeast Asian logistics hub, let alone largely decreasing travel time and costs.

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The Enterprise City

Background

The Enterprise City is a self-sufficient multifunctional city which is developed to host industrial, research, tourism, leisure and other economic activities with private enterprises taking the leading role, and to have residential, educational, medical, cultural, and other functions to support the economic activities.

Quantitative expansion and consequent overcrowding in the Capital region have caused not only economic inefficiency in the Capital region but also depression in regional economies, hampering the overall development of the national territory. Besides, the continued slump in investment has led to the limitation to the growth potential, and the consequent decrease in jobs has caused serious unemployment problem. Accordingly, there has been increasing demand for industrial cluster, or the enterprise city, in which many enterprises especially focused on core industries and items are located densely in a certain area, to cope with all these problems especially at a time when international competition is increasingly intense.

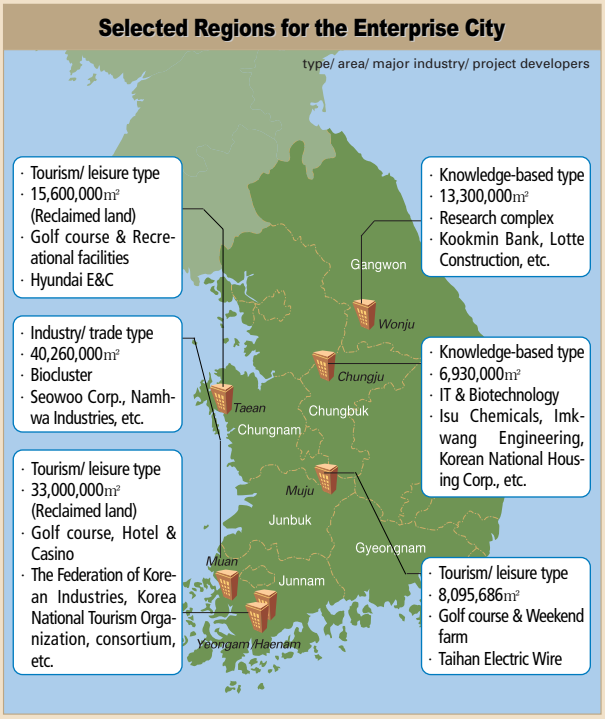
Regulations and supporting measures

The enterprise city is classified into four types according to its main function as seen in the chart below. To achieve a balanced territorial development, candidate sites for the enterprise cities should meet certain requirements. That is, in selecting sites for the enterprise cities, priority is given to areas identified as underdeveloped under the Special Act on Balanced National Development. Seoul metropolitan region and major cities and large development project-concentrated areas designated by the Minister of Construction and Transportation upon approval from the Enterprise City Committee are excluded from enterprise city considerations. To be specific, 13 cities and counties in the South and North Chungcheong Province are excluded from consideration: areas pre-selected as sites for the Multifuntional Administrative City and 10 cities and counties adjacent to these areas, and 3 counties with high development pressure due to the close proximity to the Capital region.

Project developers can be either single developer,

The Enterprise City Types

Type	Function	Minimum Total Area
Industry/ trade type	Manufacturing and trade activities-oriented	over 5 million m^2
Knowledge based type	Research and development activities-oriented	over 3.3 million m^2
Tourism/ leisure type	Tourism, leisure and cultural activities-oriented	over 6.6 million m^2
Innovation based type	Hosting relocating public agencies	over 3.3 million m^2



consortium of developers or public/ private partnership. After entering into contracts with provincial governments, the developer applies for site designation and development plan. Then consultation among concerned government bodies and then deliberations by the Enterprise City Committee are made respectively. Finally, the Minister of Construction and Transportation approves the designation and the plan. (Joint-approval is required with the Minister of Culture and Tourism for tourism and leisure type.)

Support is given to project developers by the government for investment promotion. When more than 50% of the total land within the development area has been secured, the developer can exercise land expropriation power. Exception of investment amount limitation is acknowledged in regard to the investment in infrastructure facilities. The developer is exempt from 25-50% of income tax and corporate tax for five years, and companies within the enterprise cities enjoy double the exemption for the developer. To guarantee public interests, the government has had developers meet certain conditions. For example, the participation in the enterprise city project is strictly limited to companies with a sound financial system and minimum capital assets. This is to ensure safe and sound development of the enterprise city. Project developers have to secure more than 20% of the urban development costs (land purchase costs, site preparation costs, etc.) from its own capital assets or investment funds. The confirmation of loans from financial institutions can substitute up to 50% of the required investment funds.

Development profits generated from the enterprise city development are re-invested from 25 to 85% depending on how depressed the region is, concerning the installation of public facilities in the area concerned. It is mandatory for the developer to directly use 20% to more than 50% of the land to be used for main development purpose. Minimum area requirements have been set according to the enterprise city type, to ensure that the enterprise cities secure integrated functions and self-sufficiency, and to help prevent too many enterprise cities from being developed. Conditional land expropriation power is given to project developers as long as they secure 50% of the land to be used for main development purpose, and city mayors and magistrates of counties take charge of the land expropriation so that conflicts between enterprises and people in the region can be minimized.

Current situations and future plan

Pilot projects are initiated to facilitate the implementation of the enterprise city. Application submission deadline for pilot projects was April 15, 2005. Eight regions turned out to have interest in the projects, and they are composed of one industry/ trade type (Muan), two knowledge-based types (Chungju & Wonju) and 5 tourism/ leisure types (Taean, Yeongam-Haenam, Sachun, Muju, Hadong-Gwangyang). Criteria such as ⓐ the degree to which contribution is made to a balanced national development ⓑ possibility for sustainable development ⓒ correspondence with regional characteristics and conditions ⓓ project feasibility ⓔ stable land cost management, were used for evaluation, and as a result, 6 regions of Muan, Chungju, Wonju, Taean, Yeongam-Haenam and Muju were selected as regions to implement the pilot projects in August. The site designation will be complete and the development plan will be established by the end of 2005, and construction will start in late 2006.

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International Cooperation

Delegation from Shandong, China Visit KRIHS

The Vice-Governor of Shandong in China and his delegation visited KRIHS on July 11, 2005 for the promotion of understanding and cooperation in the fields of construction and transportation between the two countries. They met with the President of KRIHS and discussed current issues including the Fourth National Territorial Development Plan of Korea.

Joint Workshop held in China on Sustainable Development and Land Policies

KRIHS and College of Southeast Land Management (CSLM) of Zhejiang University in China jointly hosted an international workshop in Hangzhou, China on October 11 through 14, 2005. The workshop was on sustainable development and land policies of Korea and China. KRIHS and CSLM have conducted joint research since 2001, and next year's research topics were agreed upon at the workshop as macro-economic policies, land market and land policy.

14th Korea-Japan Construction Economy Workshop took place in Tokyo, Japan

The fourteenth Korea-Japan Construction Economy Workshop was held in Tokyo, Japan on November 15 to 17, 2005. KRIHS, along with the Construction and Economy Research Institute of Korea took part in the workshop which was organized by the Research Institute of Construction and Economy, the leading research institute for construction economy of Japan. The workshop had important presentations and discussions under the theme of 'Disaster Prevention and SOC Construction Investment.'

Training Programs Organized for Foreign Officials at KRIHS

In the latter half of the year, KRIHS hosted training programs for foreign government officials twice in August and November in collaboration with Korea International Cooperation Agency. With 14 countries participating under the theme, 'Regional Development Strategies', the programs, which consisted of lectures, field trips, study visits and cultural experiences, provided opportunities to share Korea's experience in economic development and regional development strategies with foreign officials from developing countries around the world.

Dr. Kyu-Bang Lee, former President (fourth from right) and other staff of KRIHS, along with the participants, celebrated the completion of the training program at the closing ceremony on Dec. 1, 2005.

Joint Research Project with Egypt launched by KRIHS

KRIHS has launched an international cooperative research project with the Government of Egypt, which lasts 16 months from November 2004. The project, titled "Establishment of the national and local monitoring systems to observe and evaluate land development policies of Egypt", was initially signed by the Egyptian government and the Korean Implementation Survey Team, organized by Korea International Cooperation Agency (KOICA) on November 23, 2004, and delegated later to KRIHS.

KRIHS research team, headed by Dr. Eun-Gwan Park, Research Fellow of KRIHS, visited the General Organization for Physical Planning and other Egyptian authorities from September 27 to October 7, 2005. They met with government officials, including governors of Tanta and Assuit, and discussed issues and problems regarding urban policies of Egypt.

The project mainly covers the development of urban indicators, establishment of urban observatories and analyses and evaluations of the land development system of Egypt.

NEWS & ANNOUNCEMENTS

Northeast Asia Research Team of KRIHS held an International Workshop on "Building an Integrated Infrastructure in the Korean Peninsula" on September 29, 2005 at the KRIHS conference room. With five countries of Korea, the US, China, Japan and Russia participating, the workshop discussed building an integrated infrastructure in the Korean Peninsula following peaceful settlement of North Korean nuclear issue.

KRIHS, along with the 21st Century Forum for Human Settlements and Gangwon Development Research Institute (GDRI) jointly hosted the workshop on Sustainable and Balanced National Territorial Development on October 19, 2005 in Chuncheon, Gangwon-do. Dr. Won-Sup Lee from KRIHS and Dr. Nak-hun Song from GDRI gave presentations on "The Current Status and Issues of a Balanced Territorial Development" and "Innovation City Construction in Gangwon Region and the Policy Issues" each followed by discussions.

The 10th international seminar on GIS was hosted by KRIHS at Seoul Theater of Education and Culture on November 14 to 15, 2005. With over 20 presenters and discussants, and audience from industry, academia, research circles and the government, the seminar saw an active exchange of knowledge and opinions among GIS experts under the theme, "National GIS Policy in Ubiquitous Computing Environment".

The results of the International Urban Ideas Competition for the Multi-functional Administrative City (MAC) in the Republic of Korea were announced on November 15, 2005 with the deliberation process conducted at KRIHS on the 11th through 14th. Composed of 8 members with David Harvey and Nader Tehrani as co-chairs, the judging committee evaluated a total of 121 entries from around the world in the KRIHS hall, selecting 10 winning entries out of them. Prime Minister paid a visit to KRIHS to have a look at the entries and encourage the judging committee on the 13th.

KRIHS held a public hearing on "The Third Readjustment Plan for the Seoul Metropolitan Area," covering the period 2006-2020 on December 2, 2005 under the sponsorship of the Ministry of Construction and Transportation. The plan has been initiated to alleviate overcrowding in the Seoul metropolitan area by transforming the current centralized one-pole development system into a decentralized multi-pole system.

CALL FOR THESES KRIHS invites you to present your theses to appear in "The Korea Spatial Planning Review", a quarterly scientific journal by KRIHS which specializes in territorial development. For more information, please refer to the KRIHS website: http://www.krihs.re.kr/eng

KRIHS GAZETTE January 2006 Vol.24

Korea Research Institute for Human Settlements (KRIHS) is a non-profit research institute established in 1978. It specializes in the fields of territorial planning, housing and land policies, transportation, regional development, urban design, environment and construction economy.
KRIHS seeks to improve knowledge and understanding of the conditions and problems of the nation's resources and their interactions with people, to assist the government in formulating long-range development plans and make policy recommendations on related matters, to collaborate with the international research community in solving theoretical and practical problems concerning human settlement issues and planning, and to provide research expertise and consulting services along with training programs for foreign governments and institutions.

SPACE and ENVIRONMENT is published twice a year by Korea Research Institute for Human Settlements.
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Homepage : www.krihs.re.kr
Publisher : Byeong-sun Choe
Editor : Dong-Ju Kim
Editorial Committee : Chun-Man Cho, Young-Mee Choi Jin-Kyu Chung, Chong-Won Kim Jung-Hoon Kim, Soon-Up Park Jae-Yoon Yoo