KRIHS Gazette
Summer 2007, Vol. 28

High Speed Rail and Change in Korea's Spatial Structure

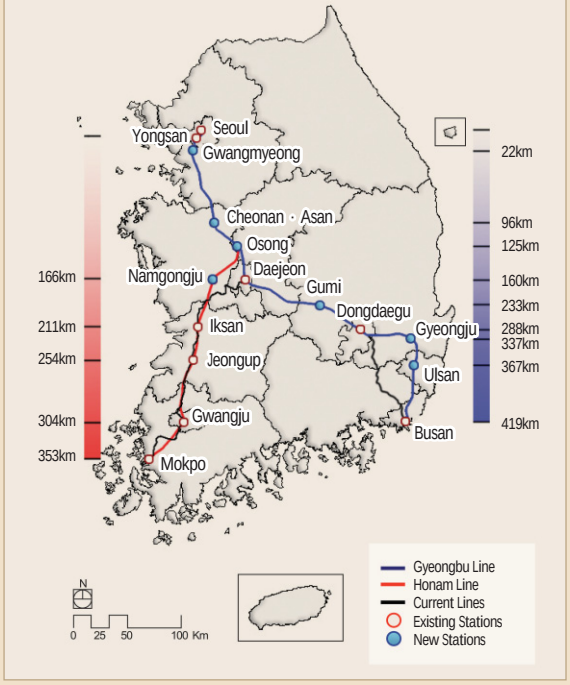
The Korea Train Express (KTX) has been running since April 2004 on the new high speed rail (HSR) system between Seoul and Dongdaegu, and on the conventional rails between Dongdaegu and Busan, and between Seodaejeon and Mokpo. The KTX is being operated in a similar way to the HSRs of France and Germany. In the meantime, both expectations and concerns have been raised with the KTX in terms of national and regional planning. As shown in Japanese and French cases, however, the effects of the HSR can be observed over a long period while they differ depending on regions. Therefore, it can be somewhat early to analyze the effects of the HSR on national spatial structure. Still, it is necessary to monitor the effects of the HSR in the beginning stages in order to set up a basic database for future studies.

HSR Effects to Date

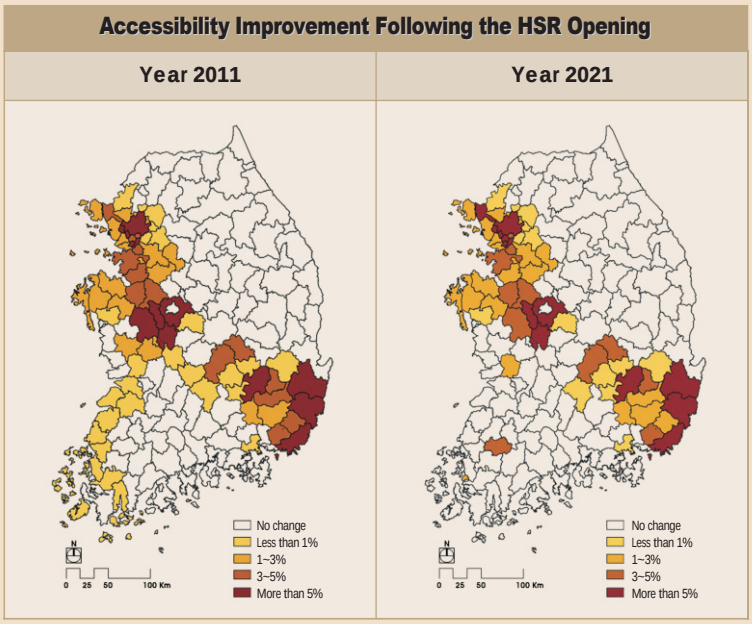
According to the study, launched in this context, the travel time of every city and county of the nation is expected to decrease with the opening of the KTX-by 290 minutes in 2011, when the Gyeongbu Line is fully open, and by 274 minutes in 2021 after the Honam Line is fully open in 2018. Also, improvements in accessibility after the KTX opening have been primarily witnessed in the capital region, Chungcheongnam-do, Daegu and Busan region, and on the west coast of the Honam region. Improved accessibility is expected to bring about changes in employment and population movement. That is, improvement in accessibility will raise regional employment and population in cities with KTX stations and their surrounding areas.

To be specific, in 2011 and 2021, the populations of Chungcheongnam-do, Youngnam, west Honam region and the capital region are predicted to remarkably increase compared to those before the introduction of the HSR in 2004.

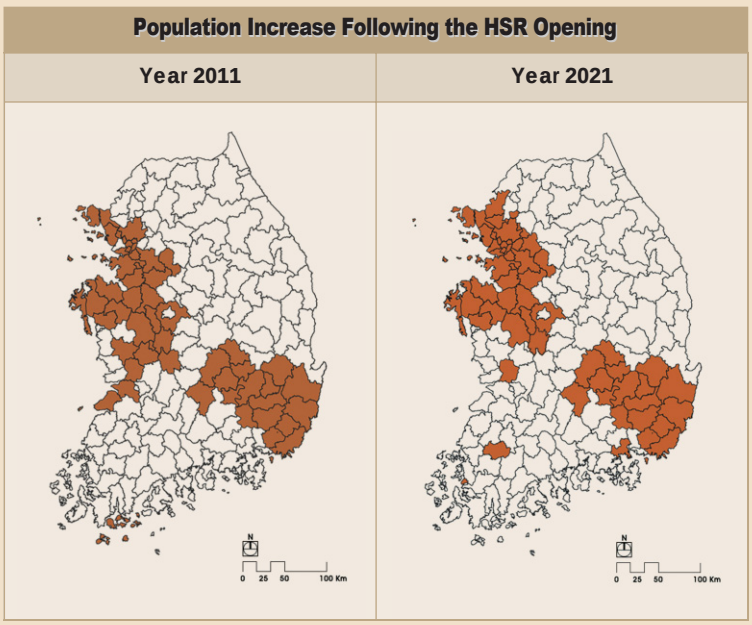
KTX Lines and Stations in 2017



Accessibility Improvement Following the HSR Opening



Population Increase Following the HSR Opening



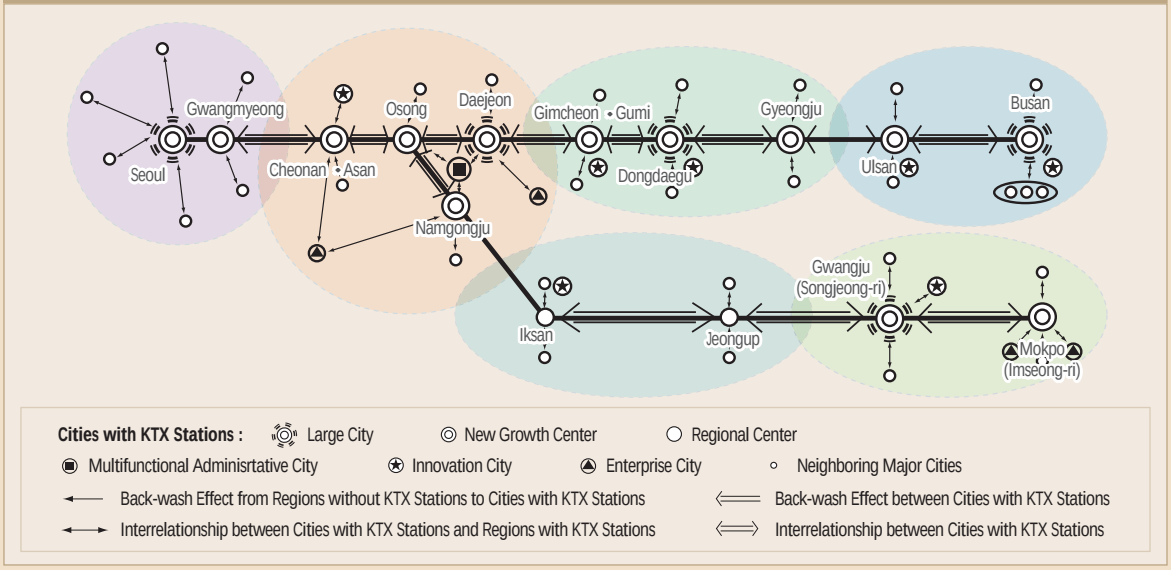
Note: The above cities and counties are those that are predicted to see population growth upon the opening of the HSR in 2011 and 2021 compared to the population before the HSR opening in 2004.

In the Honam region, only those cities with KTX stations are expected to see their population grow in 2021, not the surrounding areas. This means that improved accessibility does not necessarily result in a population increase in the entire region. The populations of Daegu, Ulsan, Gyeongju, Busan and Gwangju are expected to increase significantly in 2021.

As time passes, it has been proven that the HSR areas have experienced growth. That is, as of November 2004, the ratio of HSR passengers from cities and counties other than those with KTX stations was 7.1%, but it increased to 12.4% in April 2006. The number of HSR passengers is continuously increasing; therefore, it is expected that links between regions will be further strengthened in the future. Exchanges such as business trips and commuting between large cities outside the capital region such as Daejeon, Daegu and Busan are expected to increase also. According to the study, the function and interrelationship between those cities with HSR stations strengthen, and they influence each other.

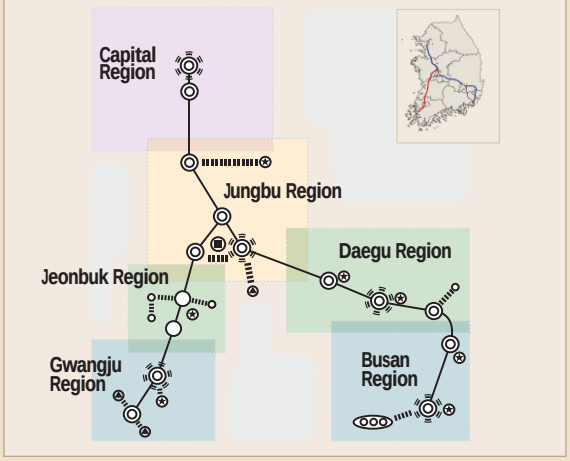
The results of an empirical analysis on Daejeon Station show that, unlike other large cities with KTX stations, a spatial change in Daejeon has occurred in the vicinity of the station after the HSR opening, though not highly distinguishable. In addition, of people dwelling in Daejeon, those who travel to Seoul using the KTX responded that they would have used other transportation modes if there had been no KTX service. This implies that the straw effect is not strong between Seoul and Daejeon. However, as for trips for specific activities such as buying high-priced goods, enjoying cultural events, and receiving high-quality medical treatment, the ratio of trips to the capital region is predicted to be higher than the other way around. It has been found that at the beginning stage of the operation, this straw effect existed for these activities, although not strongly. It can also be seen that this effect has existed even before the introduction of the HSR.

Spatial Structure Change Following the HSR Opening : Multi-nucleic Network Type



To forecast the regional effects of the HSR, the study has categorized cities with KTX stations into three types: large cities, new growth centers and regional centers. According to the study, the effects of the HSR are most salient in new growth centers. Regarding the HSR effects, large cities with KTX stations are mostly concerned about the straw effect, under which their surrounding areas are absorbed into the capital region. New growth centers are mainly worried about the decay of traditional centers, and what challenges regional centers most is the potential straw effect into large cities with the opening of the HSR.

Formulation of Area-wide Economic Zone



Future Directions

In order to reduce the straw effect, it is recommended that the spatial structure of the nation be reorganized into a 'Multi-nucleic Network' type that focuses on the development of areas surrounding KTX stations. However, the HSR alone will not make it possible to restructure regions. Rather, it depends on the policy responses by the central government as well as by each individual region. Furthermore, they should be linked with the potentials of local areas.

According to the study, it is recommendable to construct an 'area-wide economic zone' as a main tool for reorganizing the national spatial structure. In other words, to maximize the effects of the HSR, the following six area-wide economic zones are suggested in the study: the Capital, Jungbu, Daegu, Busan, Jeonbuk and Gawngju. The major tools are expansion of core functions of major cities and development of the transportation network between focal points, especially linking them to current national project sites that are under the balanced national development policy.

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* *This research has been awarded the 2006 KRIHS Best Research Prize.*

Area-wide Plan for the MAC & Adjacent Area

The Area-wide Plan for the Multifunctional Administrative City (MAC) & Adjacent Area is a plan to interactively link the space and functions of the planned site for the MAC, the adjacent area and its neighborhood. The plan includes strategies to conserve nature and systematically improve concerned facilities in the area on an area-wide basis. The plan is now underway according to the Special Act on the MAC Construction in the Yeongi Gongju Region as a Follow-up Measure for the Aborted New Administrative Capital Project.

The plan has the nature of a strategic plan, policy and guidelines at the same time, and the goal year is 2030. The spatial scope of the plan is a total of 3,597km^2, covering the entire Daejeon Metropolitan City, the entire areas of Yeongi-gun, Gongju-si and Gyeryong-si, and part of Cheonan-si of Chungcheongnam-do, and the entire areas of Cheongju-si, Cheongwon-gun, Jincheon-gun and Jeungpyeong-gun of Chungcheongbuk-do.

Goals and Strategies of the Plan

The Area-wide Plan for the MAC and Adjacent Area consists of the following three objectives:

The first objective is to formulate a new growth-pole region equipped with a pivotal national administration function and self-sufficiency. For this, the functions of national administration, public services, culture and global exchange, R&D and education, and high-tech industrial production and services, will be properly deployed, along with the network linking all of them together.

The second objective is to realize an innovation city network with a 21st-century culture and high-tech industry. To achieve this, a global recognition of the area as a 'culture representing Korea' will be promoted, and a tourism network will be constructed. In addition, grounds have been laid for meeting cultural and leisure demand of the area and attracting tourists, while strengthening the infrastructure for transportation, and information and telecommunication.

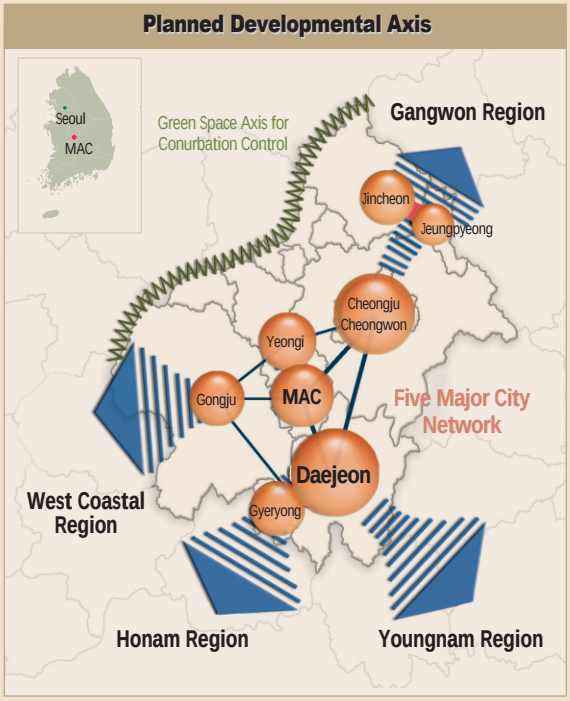
The last objective is to construct environment-friendly human settlements, and prevent unplanned development and conurbation. To achieve this, policies will be established for regional spatial structure management against conurbation and unplanned development, and environment-friendly transportation facilities will be expanded while creating a base for environment-friendly transportation.

Major Contents of the Plan

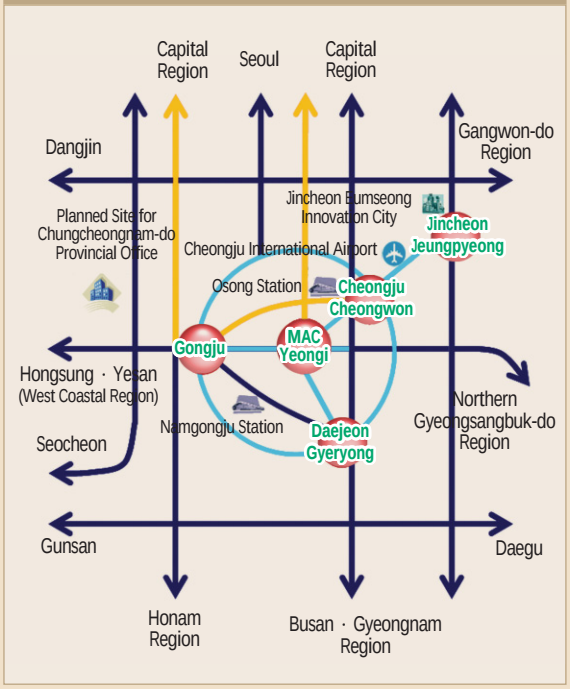
The Area-wide Plan for the MAC & Adjacent Area includes various sectoral plans such as plan for spatial structure, land use plan and area-wide transportation plan. The major contents are as follows:

Population Plan

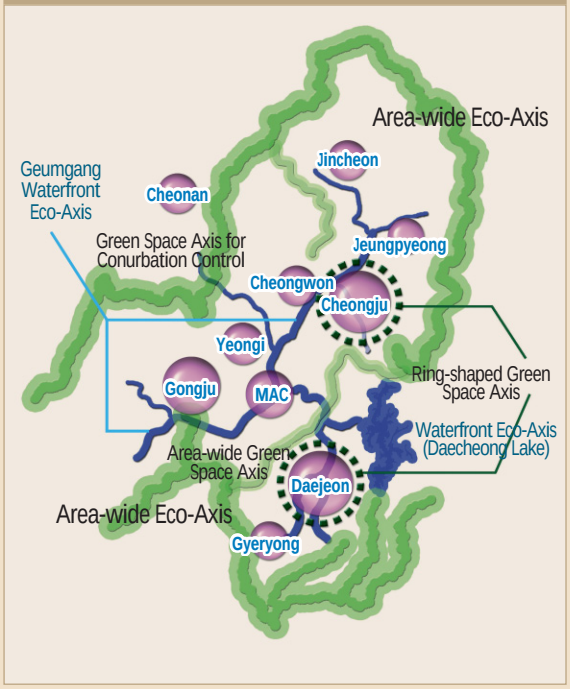
The population of the MAC and its adjacent area is planned to be an estimated minimum of 3.7 million on the condition of a 2030 completion of the MAC,



Transportation Axis



Axis of Green Space



and 4 million maximum considering the capital region population dispersion effect. The plan provides the suggested minimum and maximum population by local metropolitan government.

Spatial Structure : Axes of Development, Transportation and Green Space

According to the plan, the planned site, which is currently divided into the Daejeon and Cheongju region, will be restructured into an integrated growth-pole region that centers around the MAC, so that the development of each individual area, and the entire planned site can be simultaneously pursued. Along with this, the plan will direct the area into becoming the center for new technology development and innovation for new industries, as well as a competitive base for industry. Under the plan, the transportation network will be strengthened among major cities, and a balanced regional development will be promoted within the planed site.

Under the plan, systematic and phased development is encouraged, and a planned developmental axis is designated aiming at management and conservation, instead of pushing forward with development. The plan also sets a green space axis for conurbation management in order to curb developmental concentration along the Seoul-Busan axis, and conurbation with the capital region.

Regarding transportation planning, the plan proposes a transportation axis that is linked to national and area-wide systems of transportation. To set the axis, the plan suggests a high-speed circulative transportation system that will be easily accessible from anywhere in the nation, along with an arterial transportation system to be linked to gateways of the MAC, and an efficient transportation network between the MAC and major cities.

Regarding the green space axis, the plan sets the top-level eco-axis requiring exclusive conservation such as the Geumbuk · Hannamgeumbuk · Geumnam Mountain ranges, since they are highly conservable in terms of environment and topography. It also designates a water-front eco-axis for the protection of rivers and streams. Additionally, the plan designates restricted development area within Daejeon Metropolitan City and areas of Cheongju-si. The areas create a ring shape urban green space axis, and the green space in the area of the MAC are maintained, according to the plan, with the focus on preservation.

Land Use

Regarding land use, the plan suggests methods for land use and management focusing on functional linkage in order to establish a spatial structure of the five major cities network. The plan establishes a land use system in a planned and environment-friendly manner. The plan also presents methods for urban renewal in the downtown area and housing environment improvement in rural areas on the urban outskirts. Essentially, the plan sets development priorities considering minimum and maximum demand for land, as well as development scope and distance from downtown, and introduces the smart growth principle of regional development.

The plan stipulates that land is distributed while also divided into conservation land, urban land, planned sites for urbanization, and land for other uses. The plan preferably designates conservation land in order to promote environment-friendly urban growth and control, and prevent unplanned development and conurbation between towns. Urban land is designated, according to the plan, by combining residential, commercial and industrial land under the urban master plan. The planned site for urbanization is land that can be developed in the future, and it has been determined by considering land demand based on a planned maximum population, and development demand by local governments. Land for other uses has been distributed in ways that regions can actively deal with the land according to future development demand.

Other Sectoral Plans

In addition, the Area-wide Plan for the MAC and Adjacent Area includes sectoral plans for area-wide transportation, environmental conservation, area-wide facilities, cultural and leisure space, disaster prevention, considerations for the adjacent area and methods for implementation and management. The plan is scheduled to go through deliberation by the Presidential Committee on MAC Construction in June 2007 followed by confirmation and notification.

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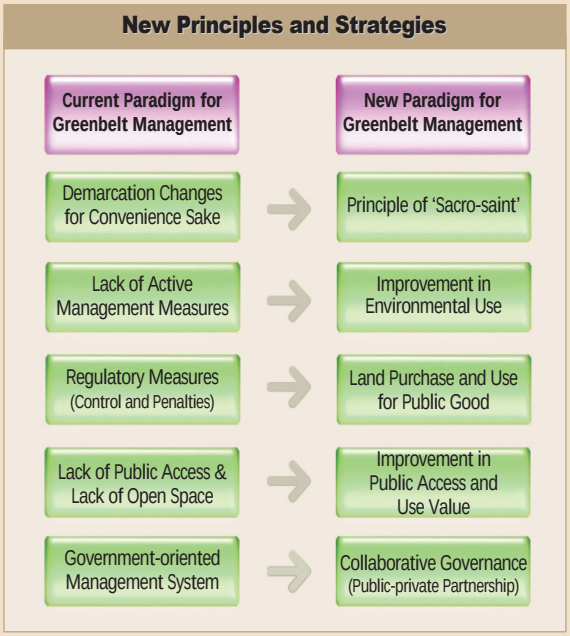
Greenbelt Management in Korea : the National Trust Approach

Current Issues and Problems

The priorities and strategies for the management of greenbelt areas in Korea have changed over time since the introduction of greenbelt areas in 1971. While the early period from 1971 to 1997 is characterized as an absolute prohibition of urban land use in greenbelt areas, in the second period since 1998, the regulatory measures have been reasonably mitigated for non-agricultural land use within greenbelt areas. That is, changing greenbelt boundaries is allowable, and certain non-agricultural land use of greenbelt areas is presently permitted.

As a result, however, 'the sacro-saint principle' of the greenbelt has been significantly damaged and is likely to collapse in the near future, according to some critics. Despite various countermeasures, serious damage has been already done to greenbelt areas, which are valuable and permanent open spaces and green areas for urban residents. Aerial photographs clearly illustrate the damages done to the greenbelt areas in the three areas of the capital region, Namyangju-si, Hanam-si and Shiheung-si.

Major issues and problems related to the management of greenbelt areas in Korea have been identified in this study as follows: first, there has been a lack of systematic management policies and tools for greenbelt preservation. The second problem can be identified as inconsistent implementation of regulations. Lastly, greenbelt areas have suffered from inactive utilization. To be specific, the problems result from a lack of financial resources for purchasing land within greenbelt areas for preservation, lack of institutional support for



greenbelt preservation, and lack of active use of ecological and cultural resources within greenbelt areas for public education and participation.

New Principles and Strategies

The major function of the greenbelt is to provide green open spaces for urban residents and contain urban sprawl, other than reserving land for future urban development. According to this function, basic principles for effective management of the greenbelt can be suggested as follows: preservation of environmental value, maximization of public access to open spaces and environmental resources, and enhancement of public participation and collaboration among different groups and organizations for greenbelt management. These principles are closely related to those of the national trust movement in that the movement deeply involves public participation and voluntary activities in order to preserve natural and historical heritages.

Policy directions that are worth considering for greenbelt management, according to the study, are, first, greenbelt areas should be preserved as permanent public open spaces. This suggestion dictates that greenbelt demarcation should be strictly maintained. Secondly, the government should facilitate and support land purchasing in greenbelt areas since public ownership of land helps preserve environmental and cultural resources within greenbelt areas. For this, the government needs to establish the Greenbelt Trust Fund in order to purchase land in greenbelt areas.

Thirdly, greenbelt areas need to be actively utilized as open spaces and environment resources for urban residents. To facilitate the use, the government should improve public access to greenbelt areas so that urban residents may enjoy education and leisure activities within these areas. Lastly, greenbelt management should be improved through public participation and collaboration among different organizations of central and local governments. This constitutes a paradigm shift in greenbelt management policies and strategies as illustrated in the diagram above.

Management of the Greenbelt Trust

Classification		Details
Institution (Organization)		• Citizen-oriented National Trust in greenbelt areas • Private-government partnership
Characteristics of Trust		• Non-profit organization or special corporation
Goals of Trust		• To preserve greenbelt areas as permanent public open spaces
Functions		• Conservation, Training and education, Utilization for eco-tourism, etc.
Operation	Organization	• At the first stage : Head office • At the second stage : Local offices and branches added
	Source of Fund	• Funds provided by central and local governments • Others, i.e. membership fees, donations, admission fees
	Government Subsidies	• Some portion of the greenbelt charges
Transfer of Property Rights		• Transfer disapproved for property for conservation

Criteria for Site Selection of the Greenbelt Trust	
Criteria	**Selected Sites (Example)**
Environmental Value (Environment-friendliness)	• High environmental preservation value • High ecological value (river, swamp, etc.)
Easy to Make Public Land or Not	• High-potential public land • High demand for development
Public Access and Usefulness	• High accessibility and usefulness for urban residents • High-potential sites for ecological training
Suitability for the Current Land Purchase System	• High environmental quality : 3 5 levels of environmental evaluation grade • Low land price • Low portion of private-owned land

National Trust Approach to Greenbelt Management

In general, the National Trust is a non-governmental organization designed to preserve natural and historical heritages through public participation and voluntary management. The main idea is to purchase natural and historical heritages with public donations so that those resources are not misused. The National Trust is run with voluntary donations, contributions and money raised through fund-raising campaigns.

According to the study, the Greenbelt Trust Fund can be established in order to effectively manage greenbelt areas in Korea. The fund can purchase environmentally and strategically sensitive sites and protect them. Suggestions for management of the fund are illustrated in the table on page 7.

Criteria for selecting target sites of the fund can be suggested as follows: environmental value, accessibility by the general public, and development pressure in the surrounding areas. Also, whether it is easy to purchase and turn the land into a public land, and whether the land fits current land purchase measures should be considered.

While the proposed legal systems and measures in the study are expected to contribute to effective and efficient management of the Greenbelt Trust, they are exploratory and preliminary in nature, and more detailed and comprehensive studies are required in the future. In particular, future studies should deal more with the physical and socio-economic aspects of greenbelt areas, and identify issues and problems with the greenbelt areas in different regional and local settings including the different institutional systems of greenbelt management and operation.

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Reconstruction Project : Management and Betterment Recapture

To plan proper sites in preparation for demand for development and attract development is the essential role of urban planning. Despite that, to date, the intentions of residents for reconstruction, and the results of safety diagnoses on concerned buildings have determined whether to reconstruct or not, without sufficiently considering urban planning. Therefore, it is necessary to explore rational methods to manage urban renewal projects under urban planning including reconstruction. In addition, owners who reap development gains from reconstruction without proper institutions for betterment recapture, need to pay restitution for social equity.

Reconstruction Site : Jamsil-Jugong

Air View of Reconstruction : Jamsil-Jugong

Management of Reconstruction Projects under Urban Planning

There are several ways to manage projects of reconstructing apartments under urban planning. First of all, when the floor area increases in certain reconstruction projects, this can be managed under urban planning. This method can help plan development in advance and prevent generation of development gains. In other words, by controlling the floor area ratio (FAR) standard in the following three ways, reconstruction projects can be planned prior to development:

The first method is to apply the same FAR of the previous zoning area even though the concerned zoning area is up-zoned into another zoning area. In case development beyond the FAR of the previous zoning area is allowed, the development gains are restituted. This method is limited to an up-zoning and less likely to cause opposition compared to a down-zoning. This method is easy to implement for the same reason. However, the method is not likely to be widely utilized since it applies only when there is a change in the type of zoning area.

The second method is to allow development within the FAR standard, recognizing the vested interests of the land owner. On the other hand, development beyond the standard is managed by the public sector, and the development gains are recaptured. People regard this method as a regular down-zoning type, and easily accept it compared to others.

Under the last method, development adopting the FAR standard of the current zoning area is not allowed. Instead, any additional development is managed by the public sector. Development is permitted on the condition of imposing development charges up to the FAR standard, and development beyond the standard is allowed in case public planning is prepared within the FAR stipulated in the relevant ordinance.

This method allows long-range urban planning to be set up in its proper sense since it clarifies whether to approve development rights and streamlines land use and management. The process of urban planning and urban renewal projects can be more impartial. It also prevents development gains from reverting to property owners under urban planning.

To control the floor area by securing rights to daylight is another method to manage reconstruction under urban planning. That is, if a certain level of daylight is made compulsory, the FAR of rectangular shape apartment buildings can be restricted to below 180%, which contributes to improving housing environment and the quality of people's lives. If built in a square shape, however, ultra-high rise apartment buildings are likely to be jumbled, since the FAR can be expanded to a maximum of 300% if they are built 35 to 50 stories high.

Lastly, the floor area can be managed in terms of

the total allowable floor area. That is, urban growth can be controlled by setting the limit of the FAR allowable for development according to the capacity of infrastructure by town of a certain unit. This is intended to reduce urban problems such as traffic congestion and environmental contamination. Various methods can be utilized to introduce this policy. The capacity of infrastructure can be used as the criteria; more floor area can be assigned to underdeveloped areas under the principle of balanced development; lastly, a certain amount of the infrastructure can be set as a goal, with the floor area additionally assigned depending on the accomplishments.

The infrastructure to be utilized for the calculation of infrastructure capacity, which will constitute the criteria for the total of allowable floor area, can be selected from the 53 types of infrastructure stipulated in the Act on Planning and Use of National Territory, considering the relevance to development density, whether it is easy to obtain data, and whether it can be applied to the unit space of local governments.

The level of infrastructure capacity for the calculation of the total of allowable floor area can be determined in the following ways: first, designating the capacity of the infrastructure with minimum capacity compared to the target capacity as the infrastructure capacity of the area concerned. Secondly, weight is added to the capacity of different types of infrastructure, and the figures drawn are added together. The results create the infrastructure capacity of each region. Lastly, regarding the infrastructure beyond the target capacity, the points exceeding the target capacity are to be ignored. Instead, the capacity is determined by adding the points of each individual infrastructure. Considering that different features of different infrastructure facilities and regional circumstances can be reflected, the last alternative is the most rational.

Methods for Betterment Recapture

Part of development gains from reconstruction can be recaptured in various ways as follows:

First, development charges can be imposed under the current Restitution of Development Gains Act. Reconstruction can be simply added to the Implementation Act of the above Act as a target project, and this way, reconstruction projects can keep consistency with other development projects in terms of restitution of development gains. However, for reconstruction projects, the prices significantly increase prior to the point of project commencement, and this may drop the effectiveness of development gains restitution.

Secondly, the point of approval of the constitution of the Committee for Reconstruction Association can be designated as the project commencement point. This has the effect of enhancing the effectiveness of development gains restitution by advancing the project commencement point to before full increase in price. Furthermore, it can be implemented without difficulty since approval of the constitution of the committee can be simply added to the date of development project approval.

Third, the development gains can be restituted by simply applying the official land price to the increased proportion of the total floor area. This makes it easy to calculate development profits while solving the difficulty of designating the reconstruction commencement point. However, since official land prices are lower than actual trade prices, development profits can be underestimated.

Fourth, standard land price can be added to the increased proportion of the total floor area to calculate development gains. This way, the calculation of development profits is easy, and while controversy over impartiality with other development projects can arise, it is possible to calculate development gains close to market value.

Lastly, development gains can be recaptured by imposing development charges on the increased proportion of housing prices that exceed regular increases in housing prices. This is expected to enhance the effectiveness of development gains restitution by advancing the project commencement point to the level of before the full increase in price. However, the effect is low compared to the method of imposing charges on the increased proportion of the floor area.

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Development of Transportation Service Indicators

With consistent economic growth since the 1990's, the Per Capita Income of Korea exceeded US$ 16,000 in 2005, and if the nation keeps up the current pace, it is expected to join the group of advanced countries in the very near future. As the income level increases, people's demand for improved quality of life also continues to grow. Nationally, transportation facilities have been prepared so far considering only the economic effects such as travel time and cost-saving. Therefore, studies on methods to consider subjective factors of transportation on the user's side such as convenience, safety and customer satisfaction are not easily found. As a result, the validity of a transportation facilities project has been decided upon focusing on the reduction in total travel time and costs for vehicle operation following improvement in facilities.

However, considering the growing demand for improved quality of life, it is time to direct the transportation policy towards providing better transportation services for people as well as economic benefit. To achieve this, it is necessary to measure the standard of transportation services including user's convenience, safety and comfort.

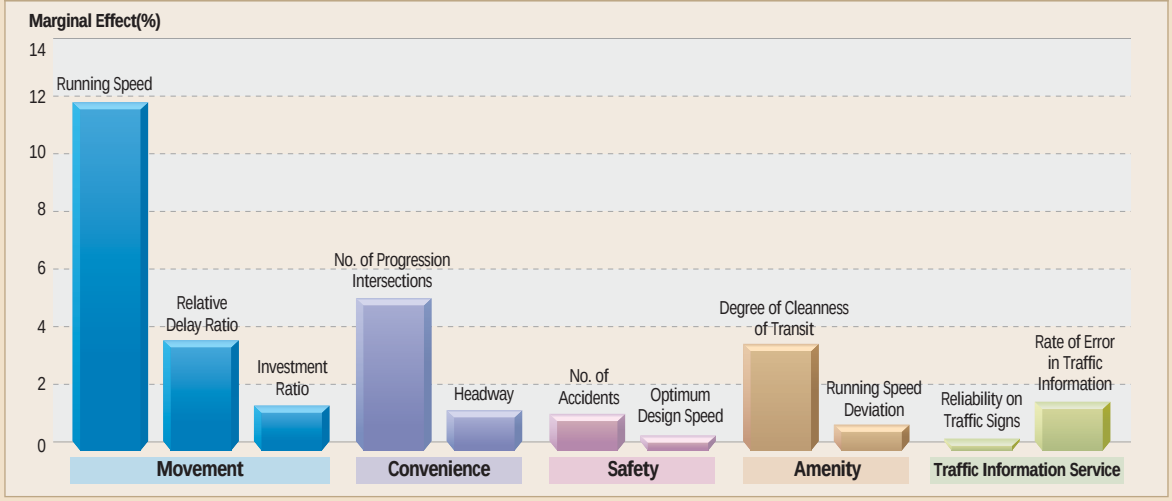
Transportation Services and Indicators

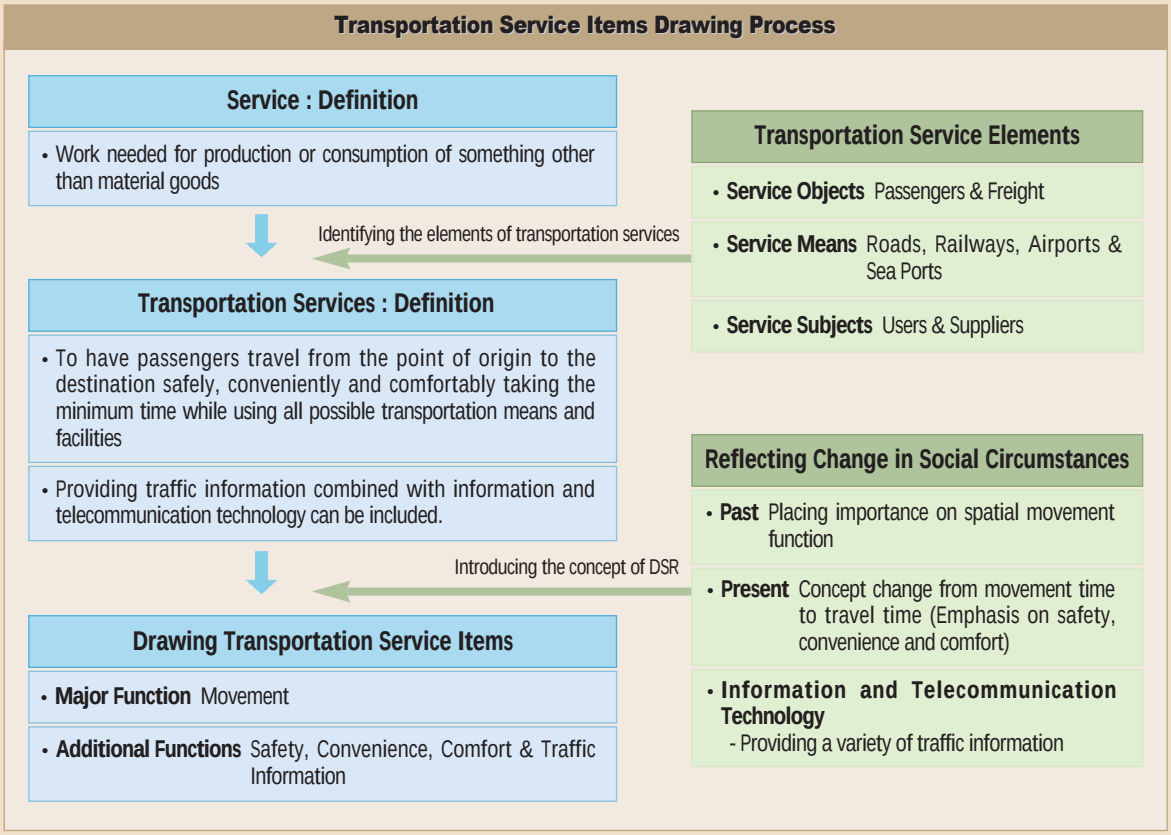
This study establishes the definition of 'transportation services' by firstly identifying service items to be provided to transportation facility users as follows: to have passengers travel from the point of origin to the destination safely, conveniently and comfortably, taking the minimum time while using all possible transportation means and facilities. Providing traffic information for safe and convenient travel can be included in the service.

Transportation services are the qualitative aspect of transportation. Therefore, in the study, the abstract concept has been linked to a specific transportation phenomenon that is measurable, and indicators have been screened based on how well they can be represented, as well as objectivity and simplicity by each item of transportation services. Finally, a total of 11 transportation indicators have been selected that are regarded to describe the meaning of transportation services in a more implicit manner.

In order to verify and apply the selected transportation service indicators, field surveys were carried out among transportation facility users. For the analysis of the survey data, the Ordered Logit

Marginal Effect Comparison by Service Indicator





model was utilized. By analyzing the marginal effect of the service indicators, the study has derived the degree of importance of each individual indicator.

Application

In this study, the satisfaction of traffic users with the transportation policy has been econometrically analyzed. That is, instead of giving a simple 'Yes' or 'No' answer, methods used in the study verify the degree of satisfaction of passengers with the direction of the transportation policy, and further, show whether people are content with the policy change. This process is expected to enable policy makers to more effectively set policy directions and prepare detailed strategies for better transportation services.

To be specific, the study has divided the process of transportation policy establishment into four stages of Setting-up Policy Goals, Plan Establishment, Project Implementation and Plan Evaluation. Then, the study has suggested methods to apply the indicators derived in the study to each of the four stages. For example, at the stage of Setting-up Policy Goals, it is possible to quantitatively set more concrete indicators in respect of services for users.

At the Plan Establishment stage, the derived transportation service indicators and analysis methodologies can be utilized in order to explore various alternatives to the plan concerned. At the Project Implementation stage, the indicators can be used to provide the criteria to judge which strategy should be preferably implemented among others. Finally, at the stage of Plan Evaluation, the indicators can be utilized as indicators for laws and regulations related to transportation facilities, and at the same time, as appraisal guidelines for government investment.

Lastly, the above methodologies can be applied to different cities and facilities with different characteristics, which will make it possible to implement differentiated transportation investment policies by region. This way, budget planning can be performed more effectively, along with providing people with better transportation services.

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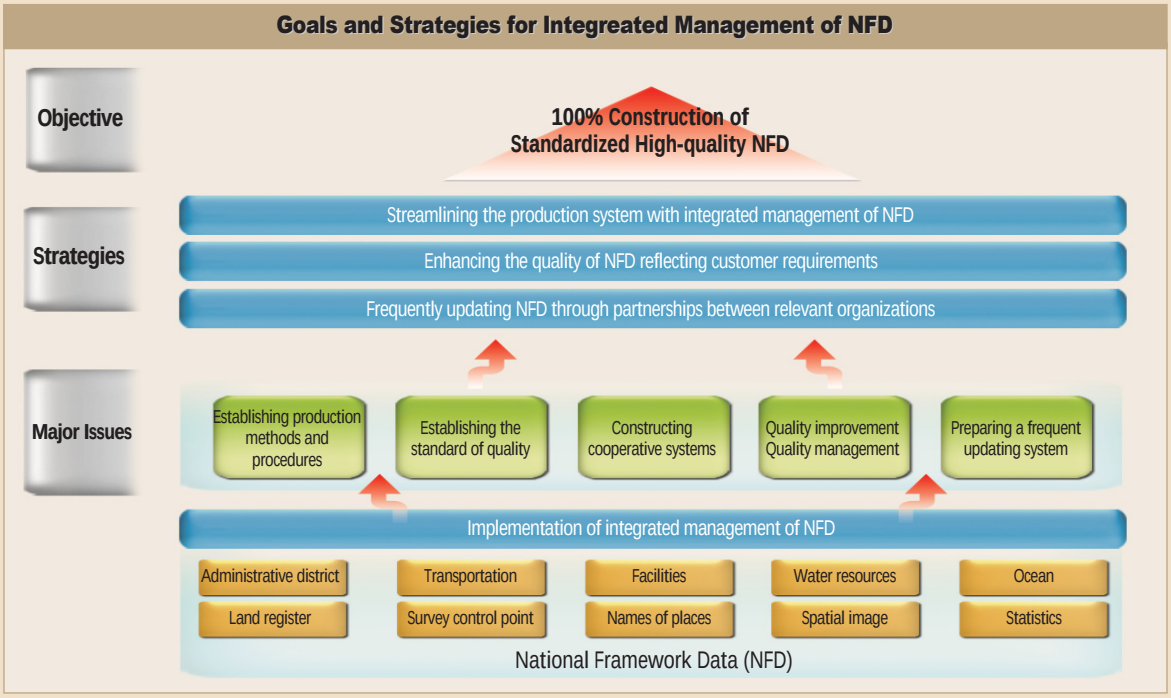
Research on the National Geographic Information System Policy

The government has established and promoted the Master Plan for the National Geographic Information System (GIS) on a five-year basis since 1995, in order to systematically construct and manage the GIS at the national level. The First Master Plan for the National GIS included the 'Research on the National GIS Policy' in order to secure base technologies needed to facilitate the National GIS Project. Under the plan, a range of plans necessary to promote the project are currently being established along with pilot research projects.

The Research on the National GIS Policy aims to reinforce the National Spatial Data Infrastructure (NSDI) such as National Framework Data (NFD) construction and national GIS Standard creation, and allow the National GIS Project to grow by consistently monitoring the project. In particular, the research is intended to assist rational decision-making by reflecting various requirements of the beneficiaries of the National GIS Project, and exploring in advance problems and solutions following the introduction of new technologies and institutional improvement. At the same time, the research performs the role of minimizing errors and mistakes that follow the implementation of new systems.

Evaluation & Implementation Plan Establishment

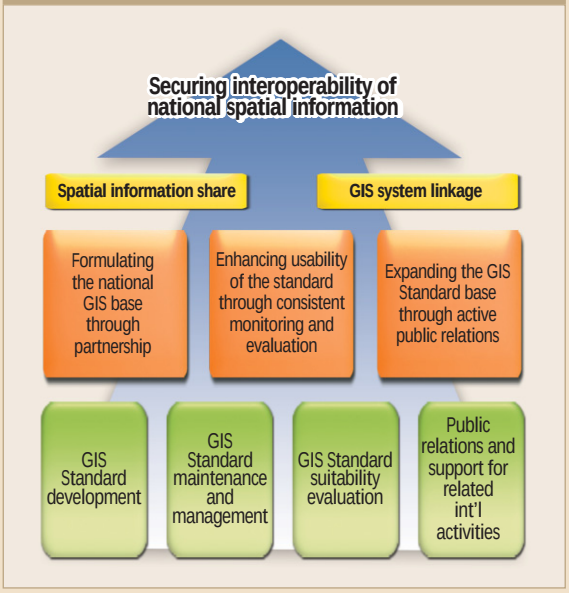
The National GIS Project ranges widely from geographic information construction to application, distribution, technology development, policies, standardization to institutions, and is being promoted as an inter-agency project. In order to facilitate the project and maximize the application, it is crucial to evaluate the accomplishments and spread the effects. However, the current method of evaluation is not systematic and comprehensive enough, and the results lack objectiveness and rationality. As a result, it is not being widely utilized. In this context, the Korea Research Institution for Human Settlements (KRIHS) has conducted the research on the methods to improve



the evaluation of the National GIS Project, and suggested mid- to long-term strategies to more systematically and comprehensively establish the basic directions to evaluating the National GIS Project along with the evaluation methods.

Problems and basic directions to improving the current evaluation of the National GIS Project are illustrated as follows, and based on this, the 2005 National GIS Project has been evaluated and the 2007 Implementation Plan established. First, the National GIS Project should be evaluated in a more effective way. Secondly, an evaluation promotion system should be established for effective evaluation. Third, the linkage between the items of evaluation and those of planning should be secured, result-oriented evaluation indicators should be set up, and a scientific evaluation method should be created by differentiating evaluation items based on different project characteristics. Fourth, the evaluation results should be disclosed and reported on, and the effectiveness should be enhanced by utilizing the evaluation results such as institutional maintenance for improvements and better use of the evaluation results. Lastly, prior planning should be introduced by designating the evaluation timing, role-sharing should be systematized, and the process of a specific evaluation schedule should be regularized.

Goals and Strategies for National GIS Standard



Methods to Integrate and Manage NFD

NFD is the most fundamental information providing a basic framework, and, as NSDI, used commonly in a wide range of fields. The Second Master Plan for the National GIS from 2001 to 2005 introduced the concept of NFD, and constructed a database; however, the production was not systematic, and it failed to meet the demands of consumers. Accordingly, the Third Master Plan for the National GIS is pushing for integrated management of NFD targeting a 100% construction of standardized high-quality NFD, in order to expand and strengthen NFD construction.

The integrated management of NFD means a system of comprehensively managing the entire process of NFD production. KRIHS has set the goals of the management and the work scope, and presented methods to produce high-quality data after reviewing the quality of existing data. Other measures suggested for the management are, monitoring of the standard and, if needed, revision in the future, preparation of guidelines, a road-map to implementing related projects on a yearly basis, and methods to improve the overlapping application of the ten[1] most important NFD.

KRIHS has been suggesting methods to set up and manage the National GIS Standard in order to establish the Standardized System for the National GIS. Based on this, KRIHS is preparing a system to facilitate the National GIS Project. In addition, to lay the groundwork for the National GIS Standard, KRIHS has come up with a mid- to long-term plan from 2007 to 2010 based on the examination of the current status of the standard application and demand survey, and created a web page to publicize the GIS Standard to people from various fields. Along with this, it has institutionalized organizations and procedures for GIS standardization, and provided measures to link the National GIS Standard to that of the International Organization for Standardization.

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1) Under the Third Master Plan for the National GIS, the following ten areas have been designated as the ten most important NFD: administrative district, transportation, water resources, ocean, land register, survey control point, topography, spatial image, and statistics.

International Cooperation

Delegation from the Special Committee on the NDS of Mongolia

Members of the Special Committee on the National Development Strategies (NDS) of Mongolia, headed by Chairman Mr Tsedendamba, visited KRIHS on April 11, and had in-depth discussions with KRIHS members on strategies for the national development of Mongolia.

During the visit, the delegates expressed keen interest in the process, main bodies in charge, and major content of the Comprehensive National Territorial Plan of Korea. Responding to this, experts from KRIHS in the fields of regional development, transportation and tourism provided in-depth reviews and consultations on Mongol strategies for national development sector by sector.

Mongol delegates in consultation with KRIHS members at the Seminar Room, KRIHS

Special Training Program for Iraqi Officials

From May 6 to 21, KRIHS hosted a training program on a 'Regional Development Policy' for 18 government officials from the Kurdistan Regional Government of Iraq. Sponsored by the Korea International Cooperation Agency (KOICA), the program was specially organized with the intent to systematically and effectively help rebuild war-torn Iraq.

During the course, the overall experience of Korea's economic development and national territorial policies were introduced, and specific lectures on regional development including land policies, housing provision strategies, and infrastructure policies were given to the participants. Several study visits were provided following the lectures to a couple of new town development sites and a transportation information center.

Bangladesh & Iraqi Delegations Visit

On May 18, four delegates from the Bangladesh Bureau of Educational Information and Statistics, including System Manager, Mr Mofazzal Hossain, visited the Geospatial Information Research Center of KRIHS. For the visit, the center briefed trends in the national GIS policies of Korea, the role of the center and its major research projects. In particular, the officials demonstrated keen interest in methods to extract data from aerial photographs and satellite images and software used for building a spatial database.

On May 31st, a group of seven Iraqi civil staffs participating in a training program at the Korea Expressway Corporation for 6 weeks visited KRIHS. The visit was organized to provide for them Korea's advanced knowledge of national territorial planning and information technology. Two research fellows of KRIHS gave special lectures on the 4th Comprehensive National Territorial Plan of Korea, and the nation's strategies for Intelligent Transportation System construction.

NEWS & ANNOUNCEMENTS

Policy discussion on the 'Construction of Disaster-free Territory' was held by the Environment and Culture Research Division of KRIHS on March 26. During the session, presentations were given by experts on the sub-themes of floods, coastal disasters, earthquakes and forest fires, followed by discussions among experts from relevant fields, civic activists and officials from government agencies concerned. The intention of the meeting was to explore policy alternatives to respond to natural disasters which seem to have grown larger and occurring at a greater frequency in recent years.

The public hearing on the proposal of the 'Master Plan for Area-wide Transportation in Metropolitan Areas' was held by the Transportation Research Division of KRIHS on March 28 at KRIHS Hall. There was a report on the research progress on the plan to date during the hearing, and a discussion session followed to collect various opinions and proposals from civic groups, media and experts on the proposal.

The third meeting of the GIS Forum was held on April 4th at KRIHS. The forum is hosted quarterly by the Geospatial Information Planning Team of the Ministry of Construction and Transportation in order to monitor the National GIS Policy, and share information on new GIS technologies and services. With officials from the Construction Ministry and other representatives from relevant industries, universities and research institutes participating, presentations were given at the meeting on the 'Prospect for Paradigm Shift in Spatial Information', and 'Geospatial Information Pricing Policy' followed by discussions.

The Environment and Culture Research Division of KRIHS held the first Territorial Amenities Forum at the Bukchon Cultural Center on April 11th, as a presentation of the ongoing research on the 'Strategies to Explore and Create Territorial Amenities Targeting Quality of Life Improvement'. At this forum, there were discussions, under the theme of a 'Long-range Initiative for Bukchon Development', on methods to manage the village of traditional Korean houses over a long period, utilizing them as an amenity asset of Korea.

Call for Theses KRIHS is offering a "Call for Theses" to appear in "The Korea Spatial Planning Review", a quarterly scientific journal by KRIHS specializing in territorial development. For more information, please refer to the KRIHS website: http://www.krihs.re.kr/eng

KRIHS GAZETTE Summer 2007 Vol. 28

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.

Korea Research Institute for Human Settlements
SPACE and ENVIRONMENT is published quarterly by Korea Research Institute for Human Settlements.
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Publisher : Byung-Sun Choe
Editor : Jin-Kyu Chung
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