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# SPACE and ENVIRONMENT

## Privatizing Infrastructure Development

**T**he expansion of public infrastructure, which is critical to the success and failure of national economies has become a major factor in the international economic competition. Japan, for instance, as part of US-Japan restructuring will invest about 4.4 trillion dollars by the year 2001. Developing countries are also investing about 200 billion dollars a year on constructing transportation, power systems, sewer systems, and telecommunication facilities. In 1994, Korea increased its investment by 30 percent and approximately 79 million dollars have been invested on such major infrastructure projects as highway expansion and the development of a new international airport.

Korea's infrastructure, as compared to its size of economy, is considerably underdeveloped. In terms of GNP, Korea ranks 15th in the world, while the road system that extends 34,248 kilometers ranks 31st, and the railway system that extends 3,091 kilometers ranks 39th. The congestion cost of roads and seaport facilities is estimated to be at 2.3 percent of the GNP. Korea's problems in social capital investment are beyond the amount of investment, but also are related to inefficient operation and management practices.

Recently, in order to encourage greater involvement by private sector, the Korean government has enacted two laws. One that supports balanced regional development and regional medium-sized manufacturing firms, and another law that encourages private sector involvement in social capital investments. The law on balanced

regional development is designed to encourage tourism development, industrial estates, manufacturing industries, and mixed industrial estates, all on a regional scale.

To promote efficiency of the private

### Private Sector Participation 1968-1993

(Unit: 100 million Won)

Case	Investment Amounts	Examples
Road	6	1,321 Seoul-Inchon Highway, Wonhyo Bridge
Railroad	12	8,244 Chungryangri, Seoul Railroad Station
Seaport	52	15,394 Pusan, Kwangyang Container Pier
ICD	4	4,719 Yangsan, Euiwang ICD
Airport	16	3,200 Kimpo International Airport Terminal
Energy	3	891 Ulsan
Total	93	33,589

sector participation in the public infrastructure, the government strategy has an emphasis on not only the construction of new infrastructure but also the management of current facilities as a role of the private developer. The new projects in which the private sector is supposed to be involved can be limited since private investment goods to be additionally financed in domestic capital market are not as substantially large as expected due to the regulation of foreign borrowings and the lower domestic saving rate compared with investment rate. Even though the private capital goods are secured, it may cause the construction economy to be overheated and national economic growth rate to be frustrated attributable to a reduction in equipment investments. On the other hand, the government focuses on creating a competitive market with few intervention on business activities

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## Land Market and the Macroeconomy

In 1991, the total land value in Korea was estimated to be 9.6 times the nation's GNP. This highly inflated land value was expected to have a significant influence on the performance of the nation's economy.

A recent study attempted to uncover the relationship between land and the macroeconomy in the Korean context. The study examined the pattern of land price movement in Korea from 1964 to 1992 and portrayed the mechanisms that were underlying the land price movement with reference to three cycles: the economic cycle; the liquidity cycle; and the policy cycle. It also evaluated the level of current land values in Korea by comparing the ratio of land values to GDP across time and countries. The current level of land value was explained through three economic rationales: the market fundamentals; the speculative bubble; and the concentrated land use pattern. Then the study discussed major impacts from recent rise in land prices by focusing on the periods following 1986. Both the impacts on the real and the financial economy were addressed.

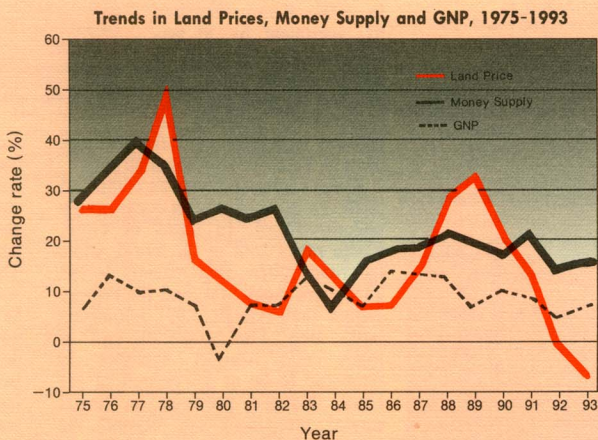
The major findings of the study were as follows. The cyclical movement of land prices, while showing a greater amplitude than other economic cycles, appeared to be closely related to the economic cycle, the liquidity cycle and the policy cycle. Out of these, the economic and the liquidity cycles moved in the same direction as did the land price cycle. Whereas the policy cycle tended to amplify the land price cycle, although this was not the cause but was a consequence of the land price changes.

It is observed that land value in Korea is relatively high compared to several other countries. However, it was found that Korea's high land value was a result of fundamental market factors and uneven land use patterns. Contrary to the general perception, the speculative bubble was not a significant factor, particularly in the long-term land values in Korea, except during the later part

of 1970's.

The recent surges in Korea's land prices affected the economic performance of the nation in several ways. The land price surge, through wealth effects, actually increased household consumption. Its impact on investment, however, appeared to be inconclusive.

As for the financial economy, the rise in land values also brought about both positive and negative outcomes. The positive outcome was that rising land value strengthened the financial status of corporations. The negative outcome was that the land value increase induced both corporations and individuals to invest more in land. This diverted resources from being used in the productive sector on the economy. The most important impact on the financial economy, however, was that the land price surges appeared to undermine the effectiveness of monetary policies by altering the flow of funds. (For further information, refer to *Land and the Macroeconomy: The Case of Korea*, KRIHS Working paper 94-01 in English)



Trends in Land Price Changes, 1964-1993						
	1st period		2nd period		3rd period	
	Surge	Decline	Surge	Decline	Surge	Decline
Period	1964-71	1972-74	1975-80	1981-86	1987-90	1991-93
Peak & Trough	1969	1974	1978	1982	1989	1993
Average rate (%)	50.0	10.7	27.4	9.8	22.3	1.4

The average rates before 1975 are for urban areas.



## Construction Credits Expected to be Eased

**D**espite strong economic conditions and significant improvements made in the financial system, the financial markets are highly regulated by the government in Korea. The policies which provided credits to the manufacturing industries were essentially promoting economic growth at the expense of non-manufacturing sectors, such as the construction sector.

The construction industry, which contributed more than 11.5 percent to the GDP in 1993, received only 8.7 percent of the total loans from financial institutions. On the other hand, the manufacturing industry, which contributed 29.0 percent to the GDP in the same year, received 45.4 percent of the total loans. The construction loans were

largely made by informal financial institutions at higher interest rates, while the manufacturing loans were made by formal institutions at much lower rates. Most of the construction loans were short-term, while manufacturing loans were long-term.

The many differences between the construction and manufacturing credits were related to the differences in industrial characteristics. There were policies which made construction credits unfavorable, such as higher interest rates on non-manufacturing loans, prohibition of rediscounting on construction bills by the Central Bank, and the restrictions placed on the issuance of construction corporate bonds.

However, the construction industry in Korea recently ex-

perienced two major changes which also affected its financial situations. First, the Korean construction market is now open to foreign firms. Therefore, new methods of construction financing, including project financing, are encouraged to increase the competitiveness of domestic firms. Second, the higher cost of transportation is regarded as a main obstacle for developing the manufacturing industry, which requires more investments in social overhead capital (SOC). Since SOC investments could only be provided through the construction industry, the government has been exploring alternative policies that would ease construction credits and financing.

**GDP and Total Loans by Construction and Manufacturing Industries**

Unit: Billion Won, %

	1988		1989		1990		1991		1992		1993	
	GDP	LOANS	GDP	LOANS	GDP	LOANS	GDP	LOANS	GDP	LOANS	GDP	LOANS
Construction	14,389.3 (9.3)	7,023.6 (8.9)	16,502.8 (10.1)	9,001.0 (8.8)	20,736.6 (11.5)	10,630.4 (8.5)	23,800.3 (12.1)	11,896.9 (7.8)	23,643.9 (11.5)	14,346.4 (7.8)	24,901.7 (11.5)	18,702.5 (8.7)
Manufacturing	45,772.6 (29.7)	35,574.7 (29.1)	47,714.0 (29.1)	44,399.8 (43.3)	52,351.0 (29.2)	55,090.1 (44.0)	57,108.1 (29.1)	72,564.0 (47.3)	60,000.1 (29.1)	87,276.6 (47.7)	62,997.3 (29.0)	97,035.4 (45.4)
Others	93,949.1 (61.0)	36,527.0 (46.2)	99,733.5 (60.8)	49,227.8 (47.9)	106,451.4 (59.3)	59,480.7 (47.5)	115,027.2 (58.7)	68,869.0 (44.9)	122,215.3 (59.4)	81,519.0 (44.5)	129,340.2 (59.5)	98,207.7 (45.9)
Total	154,111.0 (100.0)	79,125.3 (100.0)	163,950.3 (100.0)	102,628.6 (100.0)	179,539.0 (100.0)	125,201.2 (100.0)	195,935.6 (100.0)	153,329.9 (100.0)	205,860.3 (100.0)	183,142.0 (100.0)	217,239.2 (100.0)	213,945.6 (100.0)

## Seeking a New Land Tenure for Unified Korea

**T**he North-South reunification will inevitably bring about numerous social, geographical, and economic issues. After almost 50 years of physical and ideological separation, everyone realizes that the unification will not occur over night and that the actual transition will be a long process.

The land issue is viewed as one of the central issues in this transition process of reunification between North Korea and South Korea. Since 1945, the North

Korean government has prohibited private ownership of land, and by the 1970's the entire North Korea's land was state owned. Other than the land collectively owned by the 3,400 agricultural cooperatives, the remaining land is state owned. Considering the experiences of the former East Germany and other Eastern European countries, it seems inevitable that the North's land system should be converted from public to private ownership.

However, it seems that this will not be an easy task to undertake.

KRIHS has undertaken a research project dealing with this land issue. The objectives of the research are: 1) to understand the land system in North Korea; 2) to identify methods by which land can be converted from a state-ownership to a private ownership system; and 3) to develop a legal framework which will support the new land tenure system in unified Korea.



## Urban Management Guidelines for the Consolidated Cities

In 1995, with the support of their residents, 33 cities(Shi) and 32 counties(Kun) will become "Shi-Kun Consolidated cities."

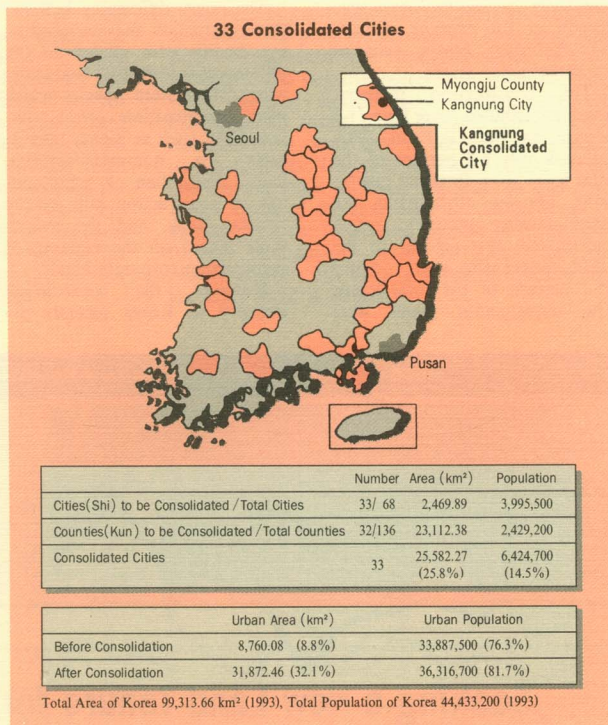
There were several reasons for consolidating the cities and their surrounding counties. First, it was to incorporate the economically depressed areas with the neighboring cities in order to include them in the appropriate regional development plans. Second, it was to extend basic infrastructure to remote areas outside the city. Finally, the cities and counties were consolidated to strengthen their combined economic potentials.

These consolidated cities will occupy an area of 25,582 square kilometers or 26 percent of the total national land area. The sheer sizes of these cities alone are expected to create a number of serious issues. First, since there is no comprehensive city development plan which integrates city plans, rural plans, and national plans, one of the initial task will be to create a comprehensive plan for each city. Second, those rural areas that were not included in any of the newly consolidated cities will continue to be ignored. Third, the portion of the national road system that will now come under the city's jurisdiction will increase from 16 percent to over 30 percent. This will essentially transfer the responsibility for maintaining and managing large chunks of the national highway system from the central to city governments.

In order to respond appropriately to these issues, a set of comprehensive city planning guidelines is needed. First, the basic city planning area must coincide with the city's administrative jurisdiction for the city government to prepare a comprehensive plan for consolidated cities. Second, those cities which are

within the influence of the national land use will be required to incorporate the national development guidelines in their city development plans. Third, in

order to increase the overall productivity, the rural and urban areas will be linked by an efficient transportation system.



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of the private developer including the joint public-private corporation, and to enhance the involvement of the private sector, a public-private agency is established to be responsible for the examination of approval process generated in various fields of the project, a review of economic subsidies and provision of legal

services. The infrastructure service can be supplied in a competitive condition due to substantial technological development of supply side and variety of service levels of demand side in current, therefore deregulation on entry and price structure is essential for the success of the private sector involvement.



[illegible]



## Plan for Newtown near Pusan Completed

A first rural setting newtown outside of Seoul Metropolitan Region will be developed in Yangsan, Kyungsangnam-do Province. The newtown can be characterized as a self-sufficient and futuristic city with high amenity rural atmosphere. It is also designed to alleviate the problem of housing shortage of nearby city of Pusan. Pusan is the second largest city in the country and located 17 km from the newtown site (Mulgeum).

The plan has been completed on a total land area of 3,114,000 pyong (1 pyong=3.3m<sup>2</sup>), of which 36.9 percent will be used for residential and 5.7 percent for commercial purposes. The remaining land will be used to develop roads, public park, open space, educational facilities, and sports facilities. The housing types will consist of apartments (26.6 percent), detached units (7.1 percent), and tenement units (3.2 percent).

The newtown will accommodate such facilities as high tech-

nology education, research park, and information and computer science industry. The plan also includes various recreational and shopping facilities. An interesting feature in the plan is the development of the International Streets which is designed to provide exotic tourist attractions.

In order to maintain low and comfortable density, the new town will have a density limit of 175 people per hectare. This implies that the newtown will have a population of about 52,000 households or 180,000 people.

The transportation needs will be met by private automobiles (35 percent), public buses (25 percent), and a subway system (40 percent). The Pusan Subway system will be extended, and 45.8 kilometers of the national highway will be widened to 4 or 6 lanes.

The Mulgeum newtown plan will be officialized by the end of this year. The construction is scheduled to begin in 1995 and expected to be completed by the year 2001.

Mulgeum Newtown Housing Supply Plan

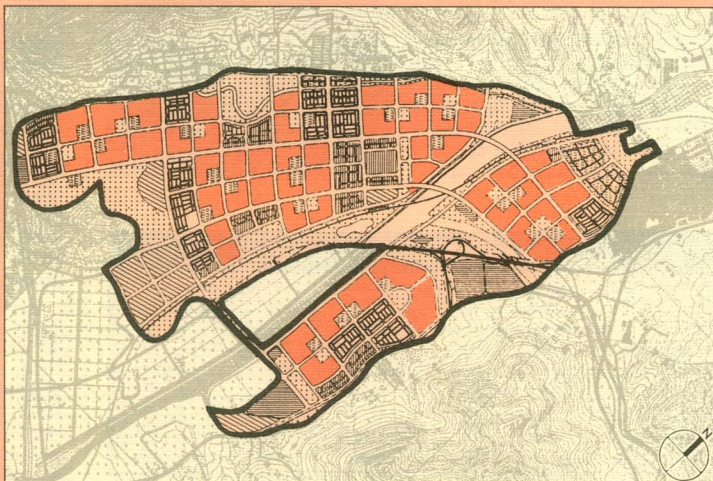
Housing Types	Area (100 pyong)	Housing Supply (HHS)	Volume Ratio(%)	Other
Detached units	213	3,600	—	60 pyong per unit
Tenement units	93	3,100	100	Average unit: 30 pyong
Apartments				
— below 18 pyong	175	12,900	120	Unit area: 53 m <sup>2</sup>
— 18 through 25.7 pyong	306	17,000	145	Unit area: 84.5 m <sup>2</sup>
— over 25.7 pyong	333	13,400	165	Unit area: 135 m <sup>2</sup>
Mixed-use Housing	30	2,000	175	Unit area: 85 m <sup>2</sup>
Total	1,150	52,000		

Mulgeum Newtown Development Plan



### LEGEND

- Apartments
- Detached Houses
- Mixed-Use
- Commercial/Business
- Educational Facilities
- Park/Open Space
- Sewage/Power Plant
- Cultural Facilities & Others





## New Regional Planning System Urged

A recent study on regional planning system in Korea by Dr. Yong-Woong Kim proposes an adoption of a new regional planning system to coordinate local land use plans at a regional scale. This study shows that the current regional planning system is inadequate to provide adequate built environment through controlling land-use activities because it is primarily concerned with the provision of infrastructure or other physical facilities to promote economic and industrial development.

There are many reasons why Korea lacks appropriate regional physical planning. First, the quality of life and amenity in built and natural environment were not a top priority concern up until recently. Second, it has been a paramount issue for planning system to support economic and industrial growth during the last 30 years of economic growth. Third, land-use plans have not been prepared for most local areas except for urban areas. Only 15 percent of the nation's land area has been subjected to be planned for land uses. About 85 percent which are under the jurisdiction of the counties has been left out from land-use planning system. Lastly, there has been little need to coordinate local land use or development plan because local governments have been under the direct control of central government.

The proposed regional planning system is to provide guidelines for local land-use activities in order to maintain unity and consistency in land use and other physical development. Under the new regional plans, all localities, cities or counties are required to prepare local physical or land-use plans which control or promote land-use activities in their localities. The study suggests that the new regional plans should be prepared by localities in collaboration with neighboring localities.



The preparation of this regional physical plans by central government is only exceptionally permitted when local governments

fail to agree each others.

The adoption of these new land-use based regional planning system requires further studies and discussions concerning the relationship between the new system and existing planning system, institutional arrangement for planning and implementation of the new system among different localities. It is hoped that this study raises relevant issues and information

on the changes in regional planning system in Korea to effectively cope with a rapidly changing external environment.

## TRISHNET Workshop on Human Settlement Database

KRIHS is expected to host an international workshop on constructing human settlement database in Asia and the Pacific on December 19-21. The purpose of this workshop is to share experiences in constructing and managing regional database among member countries of ESCAP and to discuss how to construct and manage human settlement database in Asia and the Pacific. The TRISHNET(The Network of Training, Research and Information Institutes in Human Settlements in Asia and the Pacific), launched September last year under the umbrella of UN-ESCAP, has three major areas of activity, i. e., training, research and information. Three major institutes in ESCAP region are responsible for each area; the Asian Institute of Technology (Thailand) for training, Human Settlement Management Institute(India) for research, and KRIHS for information.

The workshop deals with case studies of the member countries in successful construction and

management of human settlements database, technical discussions on the utilization of regional database, and other matters such as networking and so on. The opinions from this workshop is to be reflected in the database project which is to be carried out by KRIHS.

UN-ESCAP together with UNDP has confirmed their support for this project. The database named as HuSDAP(Human Settlements Database in Asia and the Pacific) has two components; the Who's Who Database which contains biographic information of researchers and scholars including individual's research works; and the What's On Database which contains information on research publications and training activities of the member institutions. A detailed components of the database and methods of distribution will be discussed at the workshop. Many institutions of UN already showed their interest in this project and expressed their willingness to use the database.



The International Conference on Urban and Regional Development Strategies in an Era of Global Competition was held from October 26-28. It was organised jointly with the British Council in Seoul. The conference was aimed to provide a forum to discuss the effects of globalization trends and to explore appropriate urban and regional development strategies particularly for East Asian countries. The conference was attended by scholars, professionals and government officials both from East Asian countries including Japan, the Philippines, Vietnam and Hong Kong and from European countries including the U.K. and France.

A training program for mid-level government officials from 17 developing countries was conducted from August 23 to September 4. After a series of lectures on urban and regional planning issues of Korea, a field-tour was followed to Pohang Steel Co., Daeduk Science Park, Daejeon Expo, and Bundang New Town to get on-site experiences. This is an annual program since 1987 cosponsored with KOICA of Ministry of Foreign Affairs.

Sok Chun Gi and eight other delegates from the China's People's Construction Bank visited KRIHS on June 27. The People's Construction Bank, which has 32,000 employees and 8 branches, specializes in construction and housing finance. The delegates and our housing specialists held discussion sessions on real estate markets in Korea and abroad, and the investment environments and potentials.

Zou Dechen, the Director of the Liaoning Provincial Oceanic Administration of China and Bai Delu, the Vice President of the Research Union of Liaoning Coast Resources Development visited KRIHS on June 25. The



Liaoning Province is the closest region across the eastern coast of Korea. One of the purposes of the visit was to collect information related to East Coast Development Plan of Korea. They requested copyright to translate the *Korea Coastal Handbook* and the *Study of the Coastal Management System* into Chinese.

Minister of Construction of Tanzania, Edward Lowassa, visited KRIHS on September 12 to discuss matters of mutual concern on housing, land, rural development, and environmental policies of both countries.

J. M. Duthilleul, Director of Direction de L'Aménagement, SNCF (French National Railways), visited KRIHS on November 21 to give a special lecture on "Counstruction for the Station Building of French Rapid-Transit Railway." After showing the slides on development of the station and of the subway impact area in France, he discussed French experiences of financial arrangement, organization of the development authority, and of the management of Austerlize-Seine River Gauche to be constructed in the next ten years.

Ye Gui Xiun, the director of Shanghai City Planning and Design Institute and fifteen other fellow officials visited KRIHS on

November 21. They were briefed on the development of newtowns in Korea and possible ways of research collaboration in the future.

Professor Wu Ryang Yong of Quinghua University, China, visited KRIHS on November 2 to address a lecture on "Preservation and Development for the city of Beijing."

A special lecture on "Recent Development of GIS in the United States and its Implications for Korea" was presented on October 24 by professor Tschangho John Kim of University of Illinois.

Professor of geography, Quan Song Lin of Yanbian University gave a talk on "Recent Trend in Geography of North Korea" on September 13.

Vice President, Hong, Sung-Woong went to Beijing to participate in the 14th Congress of Eastern Regional Organization for Planning and Housing. He made a keynote speech on "Sustainable Urban Development in Developing Countries." He also presented a paper on "Impacts of Globalization on Urban System in Developing Countries" at the International Conference on Cities and the New Global Economy organized by OECD and the Australian government from November 20 to 23 in Melbourne, Australia.

Contact us with a response or a question, or comment on ideas we cover in the Gazette. Fax to Space and Environment

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