National Report for Habitat II

March 1996

Republic of Korea

Part I. Introduction

To support the activities related to Habitat II, Korean government has established national committee for Habitat II in December, 1994. The committee is composed of 15 members including local government officials, NGOs, professors and researchers from academic circle. Ministry of Construction and Transportation designated the Korea Research Institute for Human Settlements(KRIHS) as a main body preparing the national report.

One of the key problems of housing in Korea is housing shortage, being measured in terms of the number of housing stock over that of the households. Accordingly, government efforts have been concentrated on the expansion of housing production and provision of low-income housing. Only recently, such the effort of expanding housing production and provision of low-income housing are being materialized as evidenced by the Two Million Housing Construction Plan of 1988-1992. Shortage of residential land has been the primary factor that causes housing supply to be inelastic. The key strategy was to supply a large amount of residential land through new town developments. Another important strategy is construction of 190 thousand units low-rent public rental housing.

The committee unanimously chose new town construction and provision of low-rent public housing program as "Best Practices." As described in Part II, these two practices revealed some negative and positive impact on the housing market and housing conditions of low-income households. Nonetheless, they could provide a good example for other countries that are facing similar problems.

As for the National Plan of Action, the committee first reviewed the demographic, socio-political and institutional changes. These changes are anticipated to occur in relation to economic growth. They may reinforce each other, causing even more profound changes to

occur.

Changes are also expected to be noticeable in the area of housing. Therefore, the whole concept of housing policy needs to be redefined at this juncture, and housing programs must be reoriented and redesigned accordingly; otherwise, the housing problems, being characterized as housing shortage and unequal distribution of housing welfare, will continue, and even get worse.

Current government housing policy is geared to the expansion of housing construction, relaxation of housing related regulations, and improvement of housing conditions for the poor. The committee put the first priority for the improvement of housing condition for the low-income families. Accordingly, the National Plan of Action will focus on the urban renewal and provision of low-rent public housing.

Part Ⅱ. Housing Situation and Housing Policy

Ⅰ. Housing situation

1. Overview

Korea has experienced a remarkably rapid economic growth since the 1960's and its per capita GNP reached 8,498 US dollars in 1994. With the fruit of such economic growth, the housing situation also has substantially improved : the number of housing units per one hundred households is 76 units and the average size of housing unit is about 78㎡.

However, the country has yet to solve its housing problems. The most serious one is the shortage of housing stock in major metropolitan areas, particularly in Seoul, where the increase in housing stock fell short of the household increase due to continuing

in-migration and decrease in household size.

Coupled with these demegraphic phenomena, the increase of personal income drastically expanded housing demand, which, in turn caused a housing price spiral between 1987 and 1991. In response to such problems, the government has launched several new housing programs such as low-rent public rental housing and new town construction. As a result, there appears to be tangible improvement in the housing condition.

Table II-1. Population, Household, and Housing Unit Change : 1960 to 1990

	1960	1970	1980	1990
Whole Country				
Polulation	24,982	30,882	37,436	39,445
Households(A)	4,198	5,576	7,471	10,167
Housing Units(B)	3,464	4,360	5,318	7,160
B / A (%)	82.5	78.2	71.2	70.4
Urban Areas				
Polulation	6,995	12,709	21,434	29,137
Households(A)	1,209	2,377	4,362	7,604
Housing Units(B)	805	1,398	2,468	4,646
B / A (%)	66.5	58,8	56.6	61.1
Rural Areas				
Polulation	17,987	18,173	16,002	10,308
Households(A)	2,989	3,199	3,109	2,563
Housing Units(B)	2,659	2,962	2,850	2,514
B / A (%)	88.9	92.6	91.7	98.1

2. Housing Shortage

The most significant characteristics of the Korean housing is housing shortage, defined as the number of dwelling units that must

be constructed if every household were to have exclusive use of a dwelling. The shortage has its roots in the wartime destruction of a major portion of the existing stock and the north to south migration of over a million people during and after the Korean War. The large initial gap between housing units and households was further aggravated by the high population growth in the 1960s, rural-to-urban migration and changes in the family structure in the 1970s and 1980s.

The current situation is illustrated in the data presented in Table Ⅱ-1. Between 1960 and 1990, the number of households expanded by 5.9 million, or 242 percent, but there was only a net addition of 3.7 million housing units to the inventory, or an increase of 207 percent. As a result, the housing shortage rate increased from 17.5 percent in 1960 to 29.6 percent in 1990 until the government launched the Two Million Housing Construction Plan(1988-1992). The geogaphic variation is large, however. In 1990, for example, the housing shortage in urban areas was 38.9 percent; whereas in rural areas it was only 1.9 percent.

Housing shortage has affected the housing tenure pattern. Korea had long been a nation predominantly of owners, as indicated in Table 2. In 1970, 91.7 percent of the housing units were owner occupied; whereas 8.3 percent were of rental status. In the last 20 years the ratio of home ownwership has decreased substantially to 78.9 percent.

While the pattern of change is pervasive, there are substantial geographic variations in home ownership. As shown in Table 2, less than three quarters of urban households (73.6 percent) owned their homes, a sharp decrease from 85.8 percent in 1960; whereas still more than 88 percent of the rural households were owner occupied in 1990.

Table Ⅱ-2. Changes in Home Ownership: 1960 to 1990

	1970		1980		1990	
	Number	Percent	Number	Percent	Number	Percent
Whole Country						
Total Units	4,360	100.0	5,318	100.0	7,160	100.0
Owner Occupied	3,996	91.7	4,621	86.9	5,653	78.9
Renter Occupied	364	8.3	697	13.1	1,507	21.1
Urban Areas						
Total Units	1,397	100.0	2,468	100.0	4,646	100.0
Owner Occupied	1,198	85.8	1,970	79.8	3,420	73.6
Renter Occupied	199	14.2	498	20.2	1,226	26.4
Rural Areas						
Total Units	2,961	100.0	2,850	100.0	2,514	100.0
Owner Occupied	2,797	94.5	2,650	92.9	2,233	88.8
Renter Occupied	164	5.5	200	7.1	281	11.2

3. Overcrowding

Overcrowding, another important aspect of substandard housing, is not a property of housing quality per se, but rather of the "fit" between the size of the unit and the number of occupants. It is believed that the effect of overcrowding on mental health and family may be more severe than the effects of physically substandard conditions (Frieden and Solomon, 1977).

The degree of overcrowding is measured in (1) the ratio of persons per room and (2) per capita floor space. The former is a better indicator of function and privacy to determine over- and under-occupied dwellings.

The data in Table Ⅱ-3 show that living conditions have been improved in the last three decades. Average persons per room decreased from 2.5 in 1960 to 1.5 in 1990; and per capita floor space increased from 6.6㎡ in 1970 to 13.9㎡ in 1990. For International comparison, United Nations' recommend room occupancy density is 1.5

persons per room and per capita floor space is 13.2 m'. It should be noted, however, that the improvement in room occupancy density and floor space has been attributable primarily to the decrease in household size rather than the improvement in housing size per se.

Table Ⅱ-3. Average Persons Per Room and Per Capita Floor Space : 1960 to 1990

	1960	1970	1980	1990
Persons per Room				
Whole Country	2.5	2.3	2.0	1.5
Urban Areas	2.8	2.7	2.2	1.5
Rural Areas	2.4	2.1	1.7	1.5
Per Capita Floor Space (Unit : m')				
Whole Country	NA	6.6	9.9	13.9
Urban Areas	NA	5.5	8.3	13.3
Rural Areas	NA	7.5	11.6	15.6

NA : Not available

4. Service Levels

The availability of public water and electric power systems constitutes other indicators of the quality of housing. Clean water is a basic requirement for public health; and the availability of electricity provides not only the source of power for domestic lighting but also access to some amenities of modern living, such as the use of appliances (Yeh 1979).

As shown in Table Ⅱ-4, there has been a substanial increase in the availability of public water and electricity, especially of the latter. About 76.6 percent of all households had public water service in 1990, compared with 26.6 percent in 1970. The rural-urban differential is large. This is partly due to the fact that the rural households are spread over a large area and therefore the provision

of services is difficult and costly unless operated through several local schemes.

Electrification is fairly widespread in Korea. About 100 percent of all households had access to electricity in 1990; almost 100 percent in urban areas and 99.0 percent in rural areas. This is a result of the government's effort since the early 1960s to promote industry by providing electric power throughout the country.

Table Ⅱ-4. Households by Availability of Public Water and Electricity: 1970 to 1990 (Numbers in Thousands)

	1970		1980		1990	
	Number	Percent	Number	Percent	Number	Percent
Public Water						
Whole Country	1,543	26.6	4,002	54.6	8,694	76.6
Urban Areas	1,494	49.8	3,935	77.2	7,880	93.1
Rural Areas	50	1.8	1.8	3.0	814	28.1
Electricity						
Whole Country	3,463	59.8	7,188	98.0	11,357	100.0
Urban Areas	2,714	90.4	5,046	99.0	8,464	100.0
Rural Areas	748	26.8	2,142	95.4	2,864	99.0

Ⅱ. Review of Government Housing Policies

1. Housing Policies Before 1988

A series of policy measures was attempted in dealing with housing problems. They were of the two types; one type related to those measures being intended to control over the excess demand for housing, including those to combat housing speculation, and the other primarily geared to controlling the sale price of housing.

Tax measures were frequently used to discourage speculative

demand. Real estate transfer income tax was extensively employed to control speculative demand for both housing and land, and it had remedial and preventive purposes. This tax measure was modified many times; the tax rates were downwardly adjusted when the real estate market was in recess, and upwardly adjusted when it was overheated.

Additionally, the government introduced "bond-bidding" system in 1983 as a device to discourage speculative motives in housing purchase on the one hand, and to "tax away" a large portion of windfall gains from both real and potential speculators. A home purchaser had to participate in the competitive bidding process when purchasing a newly built condominium unit. The highest bidder won the unit and was obliged to purchase government bonds (the type II bonds) in an amount as pledged in the bid before the sale was officially executed.

Some measures were administrative in nature. For example, the government modified the regulations on apartment sale to disqualify some people from apartment purchase. Previously, one was allowed to bid for the second newly built apartment unit three years after purchasing the first one. But the new regulation extended the period to five years, and thus, it helped reduce the number of market participants substantially. At the same time, the Office of National Tax Adminstration occasionally investigated "professional speculators" for tax evasions and the source of funds when purchasing real estates, and announced in public their names and "wrong doings."

The other important measure was the sale price ceiling system. It was basically designed to control the sale price of the newly built condominium unit and thus, to stabilize housing price. Home builders could not set the sale price on the their own. They had to abide by the price as "uniformly" set forth by the government. This scheme was initiated in 1983 as a temporary device to put a lid on "escalating" sale price of newly constructed apartment unit. No attempt was made, however, on the part of the government to do away

with the measure until very recently, although it was recognized that such a device had adverse effects on the housing market. It controlled only the sale price and thus, indirectly the costs of housing production, and had nothing to do with the market price.

Thus far, some of the key policy measures have been highlighted. Evidently, some of them were adversely affecting the housing market, thus, leading eventually to "market failure." First of all, the anti-speculation measures were basically intended to discourage "speculative minds," but there was little evidence that they had been effective in controlling speculative behavior. Some worked, but only temporarily, and none of them provided permanent solution. Besides, most of the anti-speculation measures cost the government a lot of tax money to enforce. Furthermore, since almost all of them were taken remedially, i.e., after the facts, those who had earned speculative profits already left the market, and thus, the preventive functions of them were in doubt.

Worse yet was that some of them had been counter-productive in a sense that they reduced housing production as a result of constraining land supply, and thus, raising housing price in the long run. For example, the strengthening of the real estate transfer income tax was often accompanied by "lock-in effects," and therefore, it substantially reduced the supply of residential land.

Tightening up the regulations on apartment sales and five year mandatory requirement of residence would also result in a significant reduction of housing supply, because these measures might have prevented a large number of households from upward residential mobility. As pointed out, the sale price ceiling system would not necessarily contribute to stabilizing the market price; instead, it might have raised the housing price in the long run as it had "impaired" financial position of the builders, thus, discouraging them in expanding housing production.

The price ceiling system also unnecessarily stimulated home

purchase demands, as the gap was widening between the market price and the government-set home sale price. For example, the market price of a condominum unit of 130㎡ was worth about 300 million won, but the comparable unit was sold for only one third of the market price to the holders of the Housing Subscription Time Deposit (HSTD).[1] Similary, the National Housing Funds(NHF) subsidized 66㎡ units the unit price of which was worth over 100 million won at the market, but the sale price of the unit price comparable unit was less than a half of the market price. One must, however, hold the National Housing Preemption Subscription Deposit (NHPSD) to be eligiable for the purchase of the NHF-financed unit.

There were as many as 2.1 million participants as of December, 1994, waiting in line to purchase new apartment units, but the number of housing units being sold under these schemes averaged only 200 thousand units a year.

Consequently, the competition for acquiring a decent condominum unit was very severe indeed, thus raising the price of housing. Therefore, the "rationing" device seemed to encourage, rather than discourage, speculative behavior of home purchase.

Government policies of this nature seemed to have distorted the housing demand structure. Housing demand was less sensitive to the changes in market price and in income as evidenced by a number of studies.[2]

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1) There are two types of homeownership schemes, both administered by the Korea Housing Bank (KHB); the Housing Subscription Time Deposit(HSTD) and the National Housing Preemption Subscription Deposit(NHPSD). Those who join the former scheme make a lump-sum deposit ranging from 5 up to 15 million won, and wait for two years to be eligiable for receiving the "priority" in purchasing a multifamily condominum unit. The NHPSD, on the other hand, is designed to draw deposits from the prospective purchasers of the National Housing Funds (NHF) financed condominium units, mostly provided by the Korea National Housing Corporation(KNHC) and municipal governments. The participants make monthly installments at the subscribers' discretion in order to receive "priority" in purchasing publicly assisted housing units.

Instead, the demand turned out to be more responsive to the changes in capital gains(or user costs), i.e., the difference between the purchase price and the price at which the unit was sold, being discounted at the curb market interest rate.[3] Therefore, government policies seemed to be partly responsible for change in housing demand behavior in a way that housing was viewed more as an investment asset than as a consumption good.

As critical as the distortion of the demand side of the housing market were the production and supply sides. A recent study on the Korean Housing Industry suggested that the industry exhibited a number of problem; the industry was poorly structured and disoriented. It was highly concentrated, given the fact that the share of housing production of the ten largest firms was as high as 20 percent. It was also poorly integrated, both horizontally and vertically, with such industries as financial and manufacturing industries which supplied construction funds and building materials. A large majority of home building firms revealed weak asset structure.[4] The management did not adequately respond to changes in the price of production inputs, land prices in particular, as evidenced by various production parameters recently estimated.[5] All

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2) There are a few studies which attempted to estimate the price and income elasticities of housing demand among the urban households in Korea. Most of the demand studies strongly suggest that overall, the consumer demand for housing is not elastic with respect to both price and income. Income elasticity improves substantially when permanent income is used, but still below measured through instrumental variable approach.

3) For further discussion, see Kim J.(1987)

4) For example, the debt to asset ratio ran as high as 354 percent and the ratio of net worth to total assets, only 18 percent on average. The capital stock turnover rate was about 10 times, while that of the net worth was only 5 times. Profits vary widely depending on the cyclical change in housing market. The profit ratio to total asset ran negative in 1987.

5) The elasticity measures ranged from the lower .03, the elasticity of substitution between land and labor input, to the highest .46, the cross price elasticity between labor and construction material input.

the elasticity measures were estimated to be very low, including the own price elasticities, the elasticities of substitution, and the cross price elasticities, suggesting that the firms were not making timely adjustments of production method in response to price change of one input relative to those of other inputs. Cost overruns resulting from the increase in input prices appeared to be rarely absorbed by the firms themselves through improving building technology and management. The industry was still highly labor intensive despite the fact that construction wages were rising rapidly. In fact, the analysis found that the productivity, being measured in terms of the increase in value added, was very low as compared to that of other comparable industry. The supply elasticity, as expected, was very low too; as low as one tenth of the comparable measure obtained in the U.S., and as one fourth of that found in a newly developing country like Thailand where the housing market was relatively free from government intervention.

In conclusion, the government intervention with housing market seems to be largely responsible for market distortion. In other words, policy failure seems to have led to market failure, thus, aggravating the housing situation.

2. Housing Construction Plan of 1988-1992

(1) Strategies to Expand Housing Production

Such a piecemeal approach to housing problems, as described in Section Ⅱ, would not work after all as long as there existed a significantly large amount of excess housing demand to be met. A permanent, and in fact, the most feasible, solution would be to expand housing production in a massive scale, and only recently, such an effort was materialized by the two Million Unit Housing

Construction Plan of 1988-1992. The key strategies were; supply of a large amount of residential land, expansion of housing credit, and removal of various regulations restricting residential developments.

First, the government designated close to 68 million pyong of land for residential development purpose throughout the country in accordance with the National Land Use and Management Law. They were mostly located in large urban areas, some within the developed area, but mostly in pheripheral areas currently zoned as "greenery space". The guasi-governmental bodies such as the Korea Land Development Corporation (KLDC) and the municipalities were authorized to purchase a large amount of cheap land, mostly agricultural and greenery lands, and to convert them into residential uses with some improvements thereupon. The serviced lands were sold either to such public entities as the Korea National Housing Corporation (KNHC) at cost or to private builders at the market equivalent prices.

In order to expand housing construction in the capital region the government announced five new town construction in 1989. In the 1970s and early 1980s, the government launched several large-scale housing project in Seoul in the form of "new town in-town." In the late 1980s, the new town in-town strategy pursued by the government, however, revealed its limitation due to lack of development land in Seoul. This forced the government to move outside of the Green Belt Zone.

Simultaneously with this measure, the government relaxed land use regulations. In particular, density control was substantially eased to allow for more intensive housing development. Deregulation of land use control was followed by relaxation of design standards in certain districts of large cities. Land use conversion was also made easier for housing developments. The primary intent of these measures was obviously to build more housing units, given the limited amount of residential land in urban areas, but they also brought about disorderly developments in downtown areas where lands was very

implemented in 1988.

Table Ⅱ-5. Housing Funds Supplied

(Unit: in billion won)

	1987	1988	1989	1990	1991	1992
NHF[1/]	5,914	6,311	11,739	31,481	29,129	27,639
	(45.4)	(38.4)	(38.6)	(50.6)	(48.5)	
NHB[2/]	5,219	7,725	15,535	18,542	19,389	25,494
	(40.0)	(47.0)	(51.1)	(34.9)	(36.9)	
CNB[3/]	1,530	1,941	1,485	3,298	5,000	N.A
Other Banks	348	214	268	206	500	N.A
Life Ins.com.	26	252	1,363	4,253	2,000	N.A
Total	13,037	16,443	30,390	53,205	51,500	

Source : The Korea Housing Bank
1/ NHF : National Housing Fund
2/ NHB : Korea Housing Bank
3/ CNB : Citizens National Bank
* Parenthese are percentage shares

The supply of housing funds quadrupled in less than four years from 1.3 trillion won in 1987 to 5.32 trillion won in 1990. Note also the way that the government controlled National Housing Funds (NHF) had grown during the period.

Another main feature of the plan was that different housing supply schemes were adopted for different income groups of people. Particularly, the bottom ten percent of households in terms of income level were supposed to be provided with 190 thousand units of low rent public rental housing. For this, the government allocated 3.5 trillion won of government budget, which was 85 percent of the total construction cost.

(2) Plan Implementation

The plan was very successful in promoting housing construction in a massive scale. As shown in table Ⅱ-6, the first year saw new

construction of 317,000 dwelling units (on the basis of building permits issued); a ten percentage point short of the planned target of 350,000 units, but the figure represented an increase of 31.2 percent over that of 1987.

Table II-6. Numerical Achievements

(Unit: 1,000, percent)

	88	89	90	91	92	88-91	88-92
Permit Based Total	317	462	750	648	600	2,177	2,777
- Public	115	161	270	220	250	766	1,016
- Private	202	301	480	428	350	1,411	1,761
Completion Based Total	287	353	572	695	631	191	2,538

Source : MOC, and EPB

From the second year on, the number of residential building permits issued accelerated to a maximum level of 750,000 units in 1990. The 1989 figure represented an increase of 40 percent over that of 1988. Even in 1991 over 648 thousand units of building permits were issued, and the four-year aggregate amounted to over 2.17 million by the end of 1991. In other words, two million unit construction target was achieved a year ahead of the scheduled time period. The year of 1992 issued over 600,000 units of building permits, implying that over 2.77 million units were supplied for the entire five-year planning period, approximately 35 percent more than initially-targeted two million units. Overachievement was also forseen even on the basis of housing completion. Housing completions doubled within a two-year priod from 287,000 units in 1988 to 572,000 in 1990. This was quite substantial, given the fact that the total number of housing units produced up until 1987 averaged less than 240,000 a year. The housing completion rate peaked at 695,000 units in 1992.

Expansion of housing stock obviously helped reduce the housing

shortage ratio. The housing supply ratio reached 79.1 percent by the end of 1994, up almost by 10 percent from 69 percent in 1987 when the plan was drawn up. Massive housing construction also helped stabilize home price and rent. In fact, house price gradually declined at a rate of 0.3 to 1 percentage point per month since May 1991 according to a monthly housing market survey conducted by the Korea Housing Bank. The same survey found rent falling between 0.7 percent and 1.6 percent over the same period. Further declines in both house price and rent were recorded in ensuing months.

(3) Macro-economic Impacts

Housing and the national economy are connected in a number of ways. Housing construction generates jobs and income. Its employment impact is significant because the construction industry is basically labor-intensive. The industry is also an intergral part of the national economy in terms of its share in national output and fixed capital formation. It also affects the cyclical component in GNP, and therefore, it has been used as a macro economic tool in adjusting and moderating economic cycle; housing construction is encouraged when an economy is in recess, and the reverse action is taken when the economy is in full employment.

Effects of the housing construction upon the national economy are not easy to assess, but they are generally know to be substantial. For example, The most recent input-output analysis found that the income multiplier was 1.98, implying that one unit of housing investment generates almost two units of value added in real terms.[6] This implies that housing investment significantly affects nation's output, and thus, economic growth. Employment generation coefficient

6) For the detail, refer to "Impact of the Two-Million Housing Construction Plan on the National Economy" Ro, Chung Hyun of the HanYang University (Unpublished research paper).

is also high relative to those generated by other investments. The figure estimated runs as high as 0.27.

It also contributes to the national economy in terms of fixed capital formation. In 1990 somewhere near the peak of the housing construction cycle, gross housing investment was 21 percent of the total fixed capital investment and contributed 8.4 percent to the nation's GNP, far above the desirable level of 6 to 6.5 percent. As shown in Table Ⅱ-7 below, the ratio may rise as high as 9.7 percent in 1991.

One recent study using macro-economic model found that a ten percent increase in housing investment contributed to 1 percent increase in GNP, 1.4 percent increase in money supply (M_2), 1.5 percent increase in employment, and 2 percent increase in fixed capital formation. The same study, using 1989 real figures, also pointed out that a ten percent increase in housing investment induced 0.6 percent increase in imports and increased overall balance of payment deficit by 93 million US dollars. It also affected overall price level as it raised GNP deflator by 0.5 percent and money supply.[7]

Table Ⅱ-7. Housing Investment

(Unit: trillion won)

	88	89	90	91	92	Total
Housing Inv.	5,968	7,867	14,660	19,060	18,515	66,070
Ratio to GNP	4.7	5.5	8.7	9.7	8.2	-

Such impact does not seem to be quite substantial, given the size of the nation's economy, but the cummulative effects would be enormous in the long run. Excessive investment in housing were hardpressing various input markets; land, capital, construction

7) These figures were derived from the parameters estimated by Professor Suh Seong-Hwan of the Yonsei University, using a recently developed macro-economic model.

material and labor market in particular. Equally serious was that non-housing construction activities were expanding in a similar pace. According to recent statistics released by the National Statistical Office, the total construction activities increased rapidly; 18.5 percent in 1989 and 27.9 percent in 1990, and they represented 22.4 percent of the nation's GNP in 1990. And the investment figure remained at the approximately same level during the first half of 1992 (22.5%).

Domestic awards for residential and office buildings as well as commercial establishments were worth 10.65 trillion won, up 48.6 percent from that of 1989. Approximately 60 percent of them were for housing construction.

The monthly average number of construction employees rose by 9.1 percent to 903,317 persons in 1990, but the average number of construction workers in the year's first quarter hit a record high of 1.8 million. The number, however, fell to 1.5 million in May 1990. The statistics also indicate that the per capita arrange labor cost grew by 26.8 percent to 25.4 million won in 1990. The average wage of construction workers increased by 34.3 percent annually during the 1989-1992 period. The prices of construction materials also soared substantially during the same period. The wholesale price for ready mixed concrete, for example, rose by 34.3 percent in April 1992 and 29.7 percent in May, while those for cement and reinforces steel bars rose 1.6 percent and 6.6 percent, respectively, in the month of June 1992.

The governement attempted to discourage construction activities rather drastically. Various measures were taken to reduce construction activities of commercial structures and government buildings, but they affected housing construction only minimally. Tighter measures were put into effect, being primarily geared to reduce the number of housing construction starts to a desirable level of 500,000-600,000 units down from 680,000 units.

It is very clear that the housing sector has been overly invested to the extent that it almost jeopardized the normal operation of the national economy. This problem seems to have occurred primarily because policy and planning efforts in housing area have been pursued in isolation from the macroeconomic perspective.

Ⅲ. Best Practices

1. Public Rental Housing Program

(1) Introduction

Enhancement of low-income housing services has been a big concern in many countries and several countries have implemented public rental housing programs to tackle low-income housing problems. Comparisons of benefits among various housing subsidy measures such as public housing, housing voucher, and cash grants have shown that the low-rent public rental housing program has better redistributive effects than other subsidy measures, especially for the most deprived families (Olsen and Barton, 1983: Hammond, 1987: Min. of Construction, 1989). On the other hand, there have been some worries that public rental housing will suppress the private sector rental housing activities and thus will weaken the functioning of low-income housing market in the long run(Ohls, 1975).

Mass production of housing has comprised major housing policies in Korea for the past 20 years. While it has contributed to the alleviation of housing shortages among the middle income households, low-income housing market has been reduced considerably through the replacements of low income areas to middle income areas. Demolition of existing housing stocks has reduced housing opportunities among

low-income households and affected quite seriously to rental families. This is because low income housing markets have been largely operated by individual homeowners who rent out a part of their houses, so removal of one housing stock usually takes two or three living units.

Public rental housing program, entirely supported by government budget, was launched in 1989 in the middle of rent hike crisis and it was the beginning of public housing tradition in Korea directed to low-income households. A construction of 250 thousand units were initially planned by 1992. Although public rental housing has been demonstrated as an effective measure to deal with low-income housing problems in many developed countries, equity and efficiency issues have often been raised due to a large amount of initial government investment, a continued need for operating cost support, and a limited number of beneficiaries. However, it is generally understood that construction of public rental housing is the most effective way to relieve low-income housing problems when depressions in low income housing market have been persisted for long time due to the lack of supplies.

Since it is the first time to run the public rental housing program in Korea, many operational problems are expected. Above all, financial resources to support the construction and management of public rental housing, and the establishments of tenant eligibility criteria and consistent management policy have become pressing tasks for effective management of the program.

This section attempts to discuss some problems and issues in light of the significance of public rental housing program for solving low-income housing problems in Korea. In addition, the effects of public rental housing supply on the low-income housing market are examined through the analysis of housing market characteristics of potential tenant groups.

(2) An Outline of Public Rental Housing Plan

Public rental housing program can be characterized in many aspects such as tenant qualification, financing mechanism, rent level, dwelling size, facilities, and operation system. Social welfare recipients have been largely designated as a target group. Priorities have been given to two other groups: displaced people who would be evicted from urban redevelopment activities, and low-income veterans. Homeowners and single member households are excluded. Resident selection criteria and point system are demonstrated in Table Ⅱ-8. Households residing in overcrowded condition with larger household sizes, and long-time city dwellers have more chances to enter public rental housing according to the point system.

Table Ⅱ-8. Selection Criteria for Public Rental Housing

	Points
Room density	20
Age of household head	10
Residence period	15
Household size	20
Household composition*	10
Others*	15
Total	100

Note : * # of applicable types among the following household groups: an extended family, a single parent family, a family with handicapped members and a child household head.
** to be determined by the each municipalities.

As for financing mechanism 85% of construction cost is financed by the central government budget. The rest are supplemented by tenant deposits. Tenants are required to pay initial deposits of 1 to 2 million won depending on the size of the unit. Total monthly payment of 50-70 thousand won has to be made; 30-40 thousand won for

rent and 20-30 thousand won for maintenance fee.

Six municipalities and the Korea National Housing Corporation are in charge of management of the program and facility maintenance. Operating costs are partly subsidized by rental earnings from commercial facilities in each estate. Social welfare facilities and apartment type factories are constructed as common facilities in order to fulfill demands for welfare services and job opportunities among residents.

Tenants who are proved to be self-supportable will be withdrawn from permanent rental housing after 5 years of residency. One extra year will be allowed at that time in order to allow searching time for a new house for those tenants. Characteristics of the public rental housing program are outlined in Table Ⅱ-9.

Table Ⅱ-9. Outlines of Public Renal Housing Program

Construction Body	Local Government KNHC
Supply Plan	250 Thousand Units Seoul 84000, Pusan 49000, Daegu 35000, Incheon 18000, Kwangju 21000, Daejon 28000, Other 15000
Financing	Government Constribution : 85% Tenant Deposits : 15%
Rent	Deposit : 1-2 Million Won. Monthly Rent : 30-40 Thousand Won * Management Fees : 20-30 Thousand Won Per Month
Management	Local Government, KNHC
Dwelling Size	Apartment Type Factory, Communal Workshop, Social Welfare Facilities(Job Information Ctr., Meeting Place, Day Care Ctr.)
Contract Periods	5 Years Initially and to be Renewed Every Year After That.

(3) Socio-economic Characteristics and Housing Conditions of Welfare Recipients

It has been pointed out in the previous section that welfare families show very low as well as unstable income elasticities, which implies that incomes increase far less than housing prices. Socio-economic characteristics of welfare households appear quite different from average households, of which household head is older and household size is smaller. Four different kinds of welfare programs are run for the welfare families: the in-house care program for the elderly, the facility care program, living expense support program for the poor, and the medical care program. Households on the medical care program tend to be better off than the other welfare recipients and they are comparable to those average low income households. Medical welfare recipient counts 42.2% of total welfare families.

Table Ⅱ-10. Socio-Economic Characteristics of Welfare Recipients in Seoul

	Type A	Type B	Type C	Total
Age*	62.7	50.8	49.2	53.5
No. of Years Educated*	3.4	6.0	6.5	
Income*(in 10,000won)	4.4	14.8	18.6	14.1
Total Income(in 10,000won)	8.3	28.5	30.4	25.7
No. of Household Members	1.9	3.4	3.6	3.2
No. of rooms/Household	1.1	1.3	1.3	1.3
Per Capita Space(in pyong)	3.9	3.9	6.0	5.2

Note: Type A: In-House Protection Program for Elderly
Type B: Living Expense Support Program for the Poor
Type C: Medical Care Program
Source: Korea National Housing Corporation(1989)

For income levels more than 50 percent of total households have incomes less than 300 thousand won and more than 50% of the employed holds temporary jobs as unskilled or manual workers.

Housing supply for low-income household has been largely relied

on private sector activities, especially on individual homeowners. Housing condition has been poor due to high price of housing and rent increase in 1970s and 1980s. Housing conditions have become very much the same regardless of income levels and tenure types. There appears a weak correlation coefficient of 0.18 between income and housing size. On the other hand, household sizes seem more associated with housing demands than income levels, with correlation coefficients of 0.8 and 0.30, respectively(KNHC, 1990).

Table Ⅱ-11. Number of Rooms Per Households by Tenure

(Unit:%)

No.of Rooms / Tenure Types	1	2	More Than 3	Total
Monthly Rent	80.6	18.5	0.9	100.0
Chonsei Rent	71.3	25.7	3.0	100.0
Homeowners	33.7	50.5	15.9	100.0

Source: KNHC(1989)

Mobility tend to be less frequent among the older household heads and t.. : long-time city dwellers. On the other hand, rental families tend to move more frequently and downward mobilities to cheaper rental houses are dominant among them. Observations of households who experienced moving for the past two years show that rental families consist of 97% of movers. More frequent movings occur among families with their household heads in 40s and 50s, which is in contrast to average households with less movements in their later stages of life cycle.

Table Ⅱ-12. Age of Household Heads Among Movers for the Past 2 Years

(Unit:%)

age / tenure	Less Than 30	30-39	40-49	50-59	More Than 60	Total
Renters	3.5	13.1	28.8	27.3	27.3	100.0
Owners	0.0	0.0	37.5	37.5	25.0	100.0

Source: KNHC(1990)

Movings are more frequent among those who reside in small places of less than 5 pyeong(16.5 sq.meters) or in one room. A search for a cheaper rental house has been a major reason for move. Comparisons of living conditions in terms of tenure type and number of rooms show that more families in "chonsei" rental type experienced downward movements. Deposit ranges of 3-4 million won are most frequently asked for a chonsei rental house and 60,000-90,000 of monthly rents are asked often for a monthly rental house.

From the above, it can be inferred that movings of low income households are marginal in their nature. The analysis shows that 73.3% of households has experienced equal or downward moving and it seems more conspicuous among the more deprived families and small size households. Although permanent rental housing is expected to provide stable places for those direct beneficiaries, its effects are not likely to spread out to other low income groups since tenant rotations are not expected to occur due to low income levels among tenants. Therefore, it can be assumed that confinement of permanent rental housing supply to welfare households will hardly trigger upward moving among low income households in the long run. Moreover, differences in rent and housing qualities between permanent rental houses and private sector rental houses may encourage the black market formation, thus resulting in substantial confusions in low income housing market.

(4) Issues of the Public Rental Housing Program

Significant housing improvements, as expected, have been made through the public rental housing project. The residents are very much satisfied with the present housing condition, especially with the availability of such facilities as flush toilet, modern kitchen, and hot water bath. The benefit is estimated approximately 239 thousand won per month in Seoul.

However, limiting benefits to welfare recipients have raised equity questions among the displaced people who have been uprooted from their previous houses by urban development activities and have not been able to find an alternative place to live in since then. Approximately 80,000 households are reported to live in vinyl plastic houses converted as a temporary shelter at the periphery of Seoul. They believe that public rental housing program should provide opportunities for solving their housing problems. This will also eventually help the city government to remove illegal houses.

In addition, there are many other low-income households who are not designated as welfare families. In fact, it has been pointed out that welfare families cover just all the poor people who are in need of food or shelter subsidies(KRIHS, 1989).

Table II-13. Low-Income Households by Type

No. of Welfare Receipient families[1]	1,022,000
No. of households earning below the minimum living costs[2]	1,096,000
No. of households living in one room[3]	2,517,000

Note: 1) Ministry of Public Health and Social Affair, '89 welfare
* Welfare Income for 4 Members: 192,000won
2) The Korea Institute for Population and Health, A survey on the Minimum Living Expenses, 1990
* Minimum Living Expenses for 4 Members: 359,700won
3) EPB, Reports on Population and Housing Census, 1985.

The analysis of income elasticities for housing demand shows very low and unstable results among welfare families, which implies that their income increases are substantially lower than housing price increases.

Second, since construction expenses are entirely supported by central government budget, the public rental housing program has to compete with other programs for government budget annually, and this will make the program unsettled. In addition, there are no

considerations for the subsidization of operating cost against management cost shortages. From experiences of public housing management in other countries operating cost shortages appear to be a big concern at the moment. It has been reported from a survey of welfare families that approximately 43% of welfare families are able to pay rent and maintenance fees. Currently each management body has plans to subsidize only a part of management fees with rental revenues from the operation of commercial facilities in each estate.

Third, expenses for daily and long-term repairments take only 8.3-9.6 percent out of the total management costs and only 20% of the necessary long-term repairment costs is included in it. It should be noted that deterioration of public rental housing has been a major obstacle for the continuation of public rental housing program in U.K. and many other countries. In case of council housing in U.K. repairment costs take up 20-30% of total rental revenue in addition to these supplementary grants from government. Currently only minimum level of management services is expected for public rental housing since lowest management fees is charged to tenants with little subsidies from management companies.

2. Constuction of Five New Towns

(1) History of New Town Development: 1960-1990

The Korean government, has pursued a "new town" policy to alleviate the problems of old inner cities, especially Seoul, on the one hand, and to support its industrialization policy on the other hand. The first new town for the latter purpose was Ulsan Industrial City, launched in the late 1960's as a support city for the Ulsan petro-chemical industrial complex. The first instance of the former was the Kwangju Housing Complex (later renamed Seongnam City) developed as a part of the Squatter Clearance Program of the

Seoul city government during the same period.

In the early 1970's, during which the Korean government put all its efforts into promoting heavy and chemical industries, several industrial complexes and their support cities such as Changwon, Yeocheon and Kumi were constructed.

During the 1970's, the population in large cities grew rapidly, while the supply of housing was sluggish. This resulted in housing shortage in urban areas, especially in the Seoul Metropolitan Area (SMA) and chronic house price inflation. What made the situation worse was the economic stagnation and political instability in the early 1980's. In order to alleviate the housing shortage, the government launched several large-scale housing projects in Seoul, such as Sangaedong and Mokdong, in the form of "new town in-town."

In the late 1980's, the "new town in-town" strategy pursued by the government revealed its limitation due to the lack of developable land in Seoul. This forced the government to move outside of the Green Belt Zone to acquire cheap land for housing.

In 1989, the government announced development of five new towns in the capital region. The purpose of this section is to review the physical characteristics of these five new towns and to propose directions for the future.

(2) The Rationale for Developing New Towns

The prime factor of the new town decision of the government was population concentration in Seoul. Most developing countries have suffered from the size and continuing high growth rates of their largest cities. Korea is no exception. The population of Seoul increased to 10,798,700 persons in 1994 from 2,445,402 in 1960. About 25 percent of the nation's population is residing in an area comprising 0.06% of the national land. Population concentration in Seoul has led to overloaded public services and social

infrastructure. In order to relieve population concentration in Seoul, the government employed a wide spectrum of decentralization policy measures. None of them were very successful. Recently, the strategy to slow down population growth in Seoul has come to include an inter-regional component to promote the development of other regions remote from Seoul on the one hand, and an intra-regional component to foster Seoul and Kyonggi Province, the adjoining province of Seoul, as a polycentric metropolitan region. In other words, the government made the decision to develop five new towns as growth centers in the capital region.

The second factor was the increasing housing demand and lack of developable land. Housing prices in Seoul have increased by more than twenty percent a year since 1987. The causes of housing price inflation were the shortage of housing supply on the one hand, and the rapid growth of the Korean economy from 1986 through 1988 on the other hand. In order to accomodate the rapid population increase, Seoul has grown physically, by expanding its territory. Since Seoul is encircled by the Green Belt Zone, development beyond the Green Belt Zone was unavoidable in order to acquire cheap land for housing.

The last factor was the increased demand for suburban living. Partly due to the rise in income and the deterioration and crowding of the old inner city of Seoul, more and more Seoul residents have been turning their attention to the quality of the environment they live in. For those condemned to the stuffiness of the old inner city, modern accommodations with a well-preserved natural environment in suburban areas could be an alternative.

(3) The Outline of the Five New Towns and Development of the System

(a) Policy Goals and Directions

(i) Development of a Model for New Town Development

The announcement of the New Development Plan in 1989 opened up an era of new town development in Korea. In the mood of increasing concern for better living that came with successful economic development during the last two decades, policymakers, planners and designers were ready to put their visions of the future into effect.

The Five New Towns will be designed as complete living and working entities: jobs, homes, shops, civic facilities, sport and leisure facilities, parks and open spaces - everything is to be created within one comprehensive plan. They offer a new start for Seoulites who have been suffering from the chronic overcrowding.

(ii) Creating Self-Contained Towns for Alleviating the Congestion in Seoul

Seoul has been suffering from severe traffic congestion. In spite of the strenuous efforts of the Korean government to expand roads and the subway system, the situation has not been alleviated. Recently, an increase in the number of automobiles and commuters from satellite cities surrounding Seoul commuting to the inner city of Seoul has made the situation even worse.

The Five New Towns will provide a great chance for improving the situation. Land and housing prices in the Five New Towns will be kept low enough to induce many Seoulites as well as private firms and public organizations to move out of congested areas of Seoul. And intercity transportation networks connecting the Five New Towns with Seoul will be constructed as a way of diverting traffic which would otherwise be concentrated into Seoul. With the support of such networks, relationships among the Five New Towns and satellite cities of Seoul, rather than between Seoul and each of them, will be diversified. It will ensure the growth of each of the Five New Towns to become a self-contained entity working as an integral part of the SMA, and induce more people and activities in congested areas of

Seoul to move into the Five New Towns.

(iii) Keeping the Development System Flexible and Cooperative

The development of the Five New Towns is an unprecedentedly enormous undertaking in Korea: over 300 thousand dwelling units are to be supplied in five years; sites and services including the intercity transportation system as well as shops, civic buildings, schools, sport and leisure facilities, parks and everything else will be provided; also, many private firms and public organizations will be relocated from Seoul during the same period. The urgent need for expanding the housing supply has forced the government to exert all its efforts to materialize the whole project as scheduled. To ensure the efficiency of the project, the government has emphasized three things: the role of government as a coordinator of conflicting interests among various actors; flexible operation of housing construction schedules in tune with the dynamics of the housing market; and maximum utilization of the private sector's potential.

(b) Development Strategies

(i) Development System

Residential land has been developed and supplied by the public sector, while development by the private sector is limited to very small projects. During the last fifteen years, in which the Land Development Promotion Act was promulgated and the Korea Land Development Corporation established, the public sector supplied almost two-thirds of the total volume of land development. New Town development is no exception.

A public developer prepares a development plan. And the central government reviews the suggested plan and, if it is feasible, permits its implementation. The developer, then, starts the project with the acquisition of land to be developed. The next step is land

development and disposal. The final step of development is for the private sector and local government. Housing and commercial facilities are developed by private developers, and the local government controls and administers these developments. It should be noted that the KLDC only provides serviced land; however, the Korea National Housing Corporation and local governments are involved in either land development or construction.

(ii) Financing of Land Development

In the initial stage of new town development, a greate deal of funds are required for the purchase of land as well as for providing sites and services. The funds are raised by a kind of pre-sale system. The system is: private developers pay for their sites in advance based on a master plan; they are paid back through the sales of developed sites. Owing to this system the new town projects can be launched without any initial funds or public financing.

(iii) Strategies for Inducing Private Sector Housing

Provision of enough funds for private developers is crucial to speed up the housing supply. For this purpose, the Housing Redemption Bond System was introduced. This system, which allows private developers to issue bonds to be redeemed for houses works smoothly owing to the dual pricing system in the housing market, in spite of its very low rate of interest compared to any other kinds of bonds and/or savings. Significantly lower prices of new homes compared to those of second-hand homes guarantee capital gains for bondholders.

Another measure to induce private developers is the substitution of the fixed price ceiling. In this new system, the price ceiling is set to reflect changes in land and housing construction costs based on the standardized criteria of labor wages and material prices.

To promote rental and small-sized housing, land prices are

differentiated into three categories: the price of land for medium sized housing below the national standard, 85 square meters, constitutes the base price; land for rental housing is priced at 90 percent of the base price; the price of land for housing over the standard size is estimated based on the equivalent market value.

(iv) Design Control Strategy

The prime concern of private developers in designing housing complexes is cost-minimization due to the price ceiling system. As a matter of fact, it is hard to expect innovative ideas to improve the quality of the living environment. To control the design quality, a kind of planned unit development system was newly introduced. This system allows better harmony and integration not only between housing complexes but also between a housing complex and the town as a whole.

(c) Location and Characteristics

The five new towns are located within a 25km radius from the city center. Bundang is quite close to the Kangnam area, the newly growing urban center. Owing to this locational advantage, Bundang has been developed as a middle- and upper-income residential area, as well as a business and commercial subcenter of Seoul.

In spite of the fact that Ilsan is quite close to Kangbuk, the old CBD of Seoul, its development has been retarded due to its closeness to the DMZ. As the area, situated in the field developed along the Han River, has a well-kept natural environment, Ilsan has been characterized as a Garden City. It could also function as an integral part of Kangbuk, Seoul.

The other three new towns are located adjacent to the existing cities of Bucheon, Gunpo, and Anyang. These three new towns are considered as "new towns in-town" and are expected to function as new CBD's of their existing city. In other words, the first two are

characterized as self-contained independent new towns, and the rest are new towns in-town.

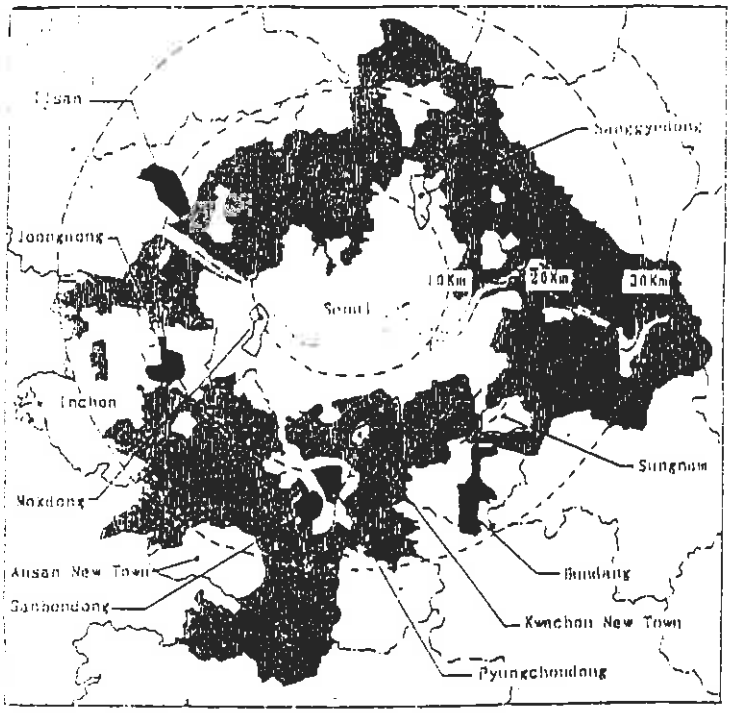

Figure 1. Location of New Towns in Seoul Metropolitan Area

Table II-13. Sketch of Five New Towns

Specification	Bundang	Ilsan	Joongdong	Pyungchon	Sanbon
Area (ha.)	1,984	1,573	544	495	419
Planned Pop.	390,000	276,000	170,000	170,000	170,000
No. of Housing Units	97,500	69,000	425,000	425,000	425,000
Developer	KLDC	KLDC	Buchon City KLDC, KNHC	KLDC	KNHC
Construction Period	1989-93	1989-93	1989-93	1989-93	1989-93

(d) Land Use Plan

Land use planning is the most important factor of the new town

planning. Land use planning requires consideration of all components, such as densities of use, population, living standard, and other cultural and geographic factors.

As shown in Table Ⅱ-14, the largest portion of the land is the residential area, ranging from 32.4% in Bundang to 45.6% in Sanbon. The next largest portions are roads and parks and open spaces which vary from one to the other. It is noticeable that the portion of the commercial and business area varies from one to the other. It must be noted that this figure for Joongdong is more than ten percent, whereas Sanbon is only about five percent. The rest are schools, administrative facilities and others.

Table Ⅱ-14. Land Use Plan

(unit: ha.,%)

Specification	Bundang	Ilsan	Joongdong	Pyungchon	Sanbon
Residential	614.1(32.4)	528.3(33.6)	180.4(33.2)	193.6(39.1)	191.2(45.6)
Commercial	85.5 (4.5)	45.7 (2.9)	51.7 (9.5)	18.3 (3.7)	22.8 (5.4)
Business	72.5 (3.8)	106.3 (6.8)	72.5 (3.8)	4.1 (0.8)	-(-)
Schools	72.1 (3.8)	59.7 (3.8)	16.6 (7.8)	34.3 (6.9)	32.5 (7.8)
Administrative Facilities	16.0 (0.9)	9.0 (0.5)	42.5 (3.1)	15.3 (3.1)	8.7 (2.1)
Roads	380.4(20.1)	304.7(19.4)	133.3(24.5)	112.7(22.8)	54.5(13.0)
Parks and Open Space	365.5(20.1)	372.9(23.7)	66.3(12.1)	70.2(14.3)	63.6(15.2)
Other	287.9(15.2)	146.4(9.3)	105.1(19.3)	46.2 (9.3)	45.6(10.9)
Total	1,894.0(100.0)	1,573.0(100.0)	543.9(100.0)	4,94.7(100.0)	418.9(100.0)

(e) Population and Housing Density

The size of the land area of the new towns ranges from 419 to 1,894 hectares. The planned population for each of the smaller new towns is 170,000, whereas the two others are planned to hold 390,000 and 276,000 residents, respectively. The average gross density of

the five new towns is 235 persons per hectare, much higher than that of Seoul, which stands at 181 persons per hectare. Net residential density figures are more dramatic. The average for the five new towns is 686 persons per hectare, while that of Seoul is 364 persons per hectare.

Table Ⅲ-15. Density for Population and Housing

Specification	Bundang	Ilsan	Joongdong	Pyungchon	Sanbon
Area (ha.)	1,894	1,573	544	495	419
Planned Population	390,000	276,000	170,000	170,000	170,000
Gross Pop. Density (persons/ha)	198	176	312	344	392
Net Res. Pop. Density (persons/ha)	615	525	907	870	937
Floor Area Ratio for Residential Area (%)	184	169	226	204	205
Ave. Multi-family Housing Size (㎡)	98	96	90	88	90

Table Ⅲ-16. Housing Allocation Plan by Size

Specification	Bundang	Ilsan	Pyungchon	Sanbon	Joongdong	Total
Under 40㎡	7,512	2,884	4,220	5,500	3,896	24,012
40-60㎡	21,662	16,832	17,651	22,152	15,883	94,180
60-85㎡	28,519	22,699	11,541	2,656	14,184	79,599
85-102㎡	6,709	3,807	2,380	6,031	1,438	20,425
102-135㎡	18,648	9,360	3,970	3,898	4,414	40,290
135㎡ and over	4,772	2,426	1,602	1,273	1,731	11,804
Total	87,882	58,008	41,364	41,510	41,546	270,310

Note: These numbers exclude single detached and row houses.

(f) Development Cost and Cost Sharing

Table II-17. Cost Sharing of Infrastructure Provision

(unit: 100 million won)

Specification			Total	Bundang	Ilsan	Pyungchon Sanbon	Joongdong
Road	Construction Cost		19,838 (100.0)	7,775 (100.0)	3,366 (100.0)	5,901 (100.0)	2,796 (100.0)
	Sharing	developer	14,265 (71.9)	6,514 (83.3)	3,366 (100.0)	1,738 (29.5)	2,647 (94.7)
		central govt.	1,517	235	-	1,197	85
		local govt	12,748	6,279	3,366	541	2,562
			-	-	-	-	-
			5,573 (28.1)	1,261 (16.2)	-	4,163 (70.5)	149 (5.3)
Sub-way	Construction Cost		17,780 (100.0)	8,839 (100.0)	4,950 (100.0)	3,991 (100.0)	-
	Sharing	developer	14,495 (81.5)	7,013 (79.3)	4,950 (100.0)	2,532 (63.4)	-
		central govt.	4,070	2,542	1,200	328	-
		local govt	10,425	4,471	3,750	2,204	-
			1,700 (9.6)	878 (9.9)	-	822 (20.6)	-
			1,585 (8.9)	948 (10.7)	-	637 (16.0)	-
Total	Construction Cost		37,618 (100.0)	16,614 (100.0)	8,316 (100.0)	9,892 (100.0)	2,796 (100.0)
	Sharing	developer	28,760 (76.5)	13,527 (81.4)	8,316 (100.0)	4,270 (43.2)	2,647 (94.7)
		central govt.	5,587	2,777	1,200	1.,525	85
		local govt	23,173	10,750	7,116	2,745	2,562
			1,700 (4.5)	878 (5.3)	-	822 (8.3)	-
			7,158 (19.0)	2,209 (13.3)	-	4,800 (48.5)	249 (5.3)

Source: Ministry of Construction

- The total cost for roads and subway construction of the five new town is 3.7 trillion won.

- The cost for infrastructure provision per housing unit are as follows: Bundang 17 million, Ilsan 12 million, Pyungchon and Sanbon 11.6 million, and Joongdong 6.5 million won.

- Cost sharing among developer, central government and local government varies from one town to another.

- However, the major portion of the cost was provided by the developer.

(4) Lessons and Future Directions

The announcement of new town development in 1989 was considered in many respects an expression of a strong government will to alleviate the housing problem in the Seoul Metropolitan Area(SMA). Partly market, housing prices in SMA had risen extremely rapidly since 1987.

The KRIHS survey result shows that housing conditions of new town esidents have improved significantly in terms of per capita floor area and housing quality. In fact, they increased their space in the range of from 30 up to 150 precent, depending on the tenure of their previous residence. Turnover survey reveals that the average chain length is about 2.4. In other words, low-income households are benefited either directly or indirectly from new housing construction in new towns. Another major impact is the stabilization of housing price, because the housing market experienced a supply of new town housing units in a large scale within a relatively short period of time. However, there are several flaws that need to be corrected. They are length of planning period, location financing land use planning and so on.

(a) The Length of the Planning Period

The creation of a city inevitably takes a long time; a city is a complex system comprising many intangible as well as tangible elements. The development of new towns is therefore a tremendous task not just in terms of the investment required, but also in terms of the socio-economic and cultural considerations which should be included in the process.

In the case of new towns in Korea, however, these preliminary stages have been undertaken too swiftly, with an average period of a year from planning to inception. In the cases of Bundang and Ilsan

new towns, the decision was made in a matter of a few weeks. This lack of prior deliberation, or rather the lack of careful examination from various perspectives, created serious problems which might hinder the successful implementation of these new towns.

For this reason, new towns should be conceived and planned very carefully over a considerable period of time, usually two or three years, during which time all the possible consequences of their development are examined before any actual construction takes place.

(b) Location of New Towns

In order to alleviate the housing shortage in the 1970s, the government launched several large-scale housing projects in Seoul, such as Sangaedong and Mokdong, in the from of "new towns in-town". In the late 1980s, however, the "new town in-town" strategy pursued by the government revealed its limitation due to lack of developable land in Seoul. This forced the government to move outside to the Green Belt Zone to acquire cheap land for housing. The five new towns are located within a 25km radius from the city center.

The five new towns became, however, like other similar developments in the capital region, a mere extension of Seoul's outlying residential districts. Although they belong administratively to Gyonggi Province, more than 60 percent of the residents commute to Seoul for jobs and other purposes. In other words, the five new towns are functionally dependent on and form a part of Seoul or are closely linked to it. The five new towns failed to fulfill the objective of new town development, which is to serve as a counter-magnet to divert migration pressures from Seoul. This means that a new town must have both residential and productive functions, and must be located 40km away from Seoul to discourage commuting.

(c) Land Acquisition and Financing

Perhaps the most immediate problem in the building of a new town is the acquisition and funding of land. With the exception of Yoido, where the entire area was under municipal ownership, the land needed for new town development in Korea has been acquired through public expropriation, with compensation at market prices. The initial investment requirements in public expropriation cases have therefore been relatively high and this has sometimes acted as an obstacle to development. In fact, since the acquisition of the entire land area has to precede any actual construction work, and as it occurs prior to any revenue acquired from the sale of lots, the burden can be substantial. Nevertheless, the adoption of the public expropriation method can avoid unnecessary conflicts and delays which might arise in the process of negotiation with the owners of each parcel of land.

The funds needed for new town development comes largely from the sale of serviced lots. These lots usually provide more than 90 percent of the total investment required, with the remaining portion being borne by the central and local governments. The cost sharing varies from one town to another. Especially, the contribution of the central government is very limited, and generally covers the cost of water supply and of railroad and major roads linking the project sites with the existing road networks.

Because land costs are extremely heavy in these developments, most new town construction is executed in phases on a rolling investment basis, with the sales of the serviced lots in the first phase, the provision of funds for the land development in the next phase, and so on. There has to be some cost-sharing method among the central and local governments and the developer.

(d) Land Use Planning

The proportion of the commercial and office area is dependent on population size, number of employees, income, and so on. The first problem to point out is the proportion of commercial and office use. Compared with previous new towns, the ratio of commercial and office area for the five new towns is higher. The fact that there have been many unsold lots in the five new towns indicates that commercial and business land has been over-supplied. The reasons why the developers created more commercial and business areas lie in their higher selling price than that of residential areas.

Another problem associated with land use planning is the size and location of parks and open-spaces. It is essential that open-space land and parks should be provided in the new town within walking distance of residential areas. However, the design concept of parks in the new towns is large-sized parks in small numbers rather than smaller neighborhood parks in larger numbers. From the point of view of users and the environment, the smaller park system in large numbers is recommended.

(e) Population and Housing Density

Gross density is the number of people per gross land area--measured either in hectares per thousand people or persons per hectare. It is generally believed that low density in the new towns is one step towards improving the environment. Such densities, however, require a large investment for the construction of infrastructure. This in turn has discouraged low-income people from moving to such new towns. Thus, in order to integrate different income groups into the new towns, integrated land use is necessary.

There is no universal standard for density. However, density is usually affected by variables such as per capita income, construcion cost, standard of living, and the availability of land and its market value. The gross density of the five new towns ranges from 184 to 392

persons per hectare, which is lower than that of the previous new towns in-town. For international comparison, the gross population density of new towns in Japan usually ranges between 100 and 140 persons per hectare.

Table Ⅱ-18. Sketch of Previous New Towns

Specification	Kwachon	Mokdong	Sanggyedong
Total area (ha.)	230	435	334
Population	54,000	114,500	146,000
Gross Pop. Density (persons/ha)	235	264	437
Net Residential Pop. Density (persons/ha)	542	495	954
Ave. Floor Area Ratio for Res. Area (%)	97	122	168

Land prices decline from the city center to the edge, a phenomenon usually described as a "bid-rent curve." This means that population density decreases from the CBD to the edge, since it is assumed that developers prefer to pile units up on a given lot by building vertically. Since the new developments took place at more distant locations than the previous new towns, we can see the decline in gross density.

On the contrary, net residential density figures are dramatic. The net residential density for the five new towns ranges from 525 to 907 persons per hectare. This means that net residential density is higher than that of the previous new towns in-town even though the gross density is lower. This is partly because the floor area ratio for the latter is higher than that of the former.

In contrast to the typical density and price gradient observed in other cities around the world, Seoul has a flat or even negatively

sloped residential density gradient. The first among many concerns is that this lack of a density gradient requires more investment in infrastructure, in particular in transportation. Second, this pattern disrupts the normal selection of locations that different users with different land intensities would choose.

These are the reflection of government policies on land-use regulation and housing price control. In other words, rigid land-use regulation has limited the supply of residential land, and in turn enhanced high-density development for available land. The present policy of controlling the price of new apartments rewards only those suppliers who can produce the maximum floor space at the minimum price. In short, the quality is more important than the quantity.

(f) Housing Type and Building Design

Another important reason for the new town development is the inducement of technological innovation and innovative techniques in planning and design. However, there has been very little change in house types and building designs. Approximately 90% of the housing is apartments and the appearance of the apartments is monotonous, lacking diversity and variety. Price control is also responsible for "uniformity" in housing developments, since there is no incentive for the firms to improve the quality of design for the apartments.

(g) Summary

A number of changes will put pressure on the housing market to provide more and better housing. First, the nation's gross national product will triple in constant dollars over the next ten years. The per capita income is expected to reach 11,000 U.S. Dollars in 1996 and 17,600 U.S. Dollars in 2001. Second, nuclear family formation will continue, resulting in over 13 million households by 1996 and

14.9 million households by 2001. All these changes imply that people will demand more housing in both quantity and quality. Especially, the demand for better quality of housing will rise as income rises.

In short, the salient characteristic of the Korean housing problem is the housing shortage. Over the last thirty years the Korean government has pursued an expansion of the housing supply. It is time to reconsider the new town policy. More emphasis has to be put on quality rather than quantity.

part Ⅲ. Direction for Future Housing Policies

1. Changes in Housing Demand

A number of changes will put the pressure on housing market to provide more and better housing.[8] First, the nation's gross national products will triple in constant dollars over the next ten years, assuming the growth momentum to continue. The per capita income is expected to reach 11,000 dollars in 1996 and 17,600 dollars in 2001. Second, nuclear family formation will continue, resulting in over 13 million households by 1996 and 14.9 million households by 2001. And finally, urbanization will accelerate to the extent that over 87 percent of the country will be urbanized the year 2001.

All these changes imply that people will demand more housing in both quantity and quality. The quantity demand will accelerate with rapid increase in households and in per capita income, and the demand

8) The discussion is an abstraction from a final report on the Housing of the Third Spatial Development Plan of 1992-2001, Korea Research Institute for Human Settlements, September 1991.

for better quality housing will rise as the middle class households rapidly expand. Large cities, Seoul and Busan in particular, will continuously experience housing shortage problem. The problem will aggravate due to a large influx of immigrants from rural areas and the demolition of existing stock. A significantly large number of existing stock will be destroyed to make room for redevelopment and replacement activities, which will exacerbate the housing situation among the low and moderate income families.

A recent estimate of new housing stock demand runs as high as 5.9 million units by the year 2001. The estimation is based on the assumption that a close relationship exists between per capita income and housing investment. The National Spatial Development Plan, however, expects that the country will have to produce a rather moderate figure of 5.3 million units over a ten year period of 1992-2001. About 45 percent of them should be produced in the first half(1992-1996), and over 90 percent of them be built in urban areas.

2. Future Housing Policy Direction

A few lessons can be learnt from the Korean housing policy efforts experimented with the massive housing production plan. One recognizes that tight market control policy would not work when demand for housing rapidly increase. Equally undesirable is any drastic measure to expand housing stock through new construction within a short period of time without due consideration on the input market constraints.

It must be also realized that housing market ought to be minimally controlled, and if there arises any need for government intervention, e.g., the discouragement of overconsuming housing and the promotion of housing industry, it must be done indirectly by means of taxation and financing. Also important is that housing policy at the national level can not be formulated and executed

independent from macro economic policies, because the interactions between the two are too great to ignore. In fact housing policy must be viewed as an integral element of the national economic policy if it is to work at all.

These lessons are emphasized here because they would shed some light on defining the future housing policy directions. As pointed out, Korean society is undergoing some drastic changes, and so is the housing sector. Housing demand changes in both quantity and quality, and market oriented solution' seem to be the most efficient way to deal with these changes. Nonetheless, the Seventh Five-Year Socio-Economic Plan attempts to arbitrarily cuts down housing investment. Housing investment will be made as long as investment return on housing exceeds those of other investments. What is required is a set of policies and programs designed to reduce excess demand for housing, but the plan has not touched on these issues at all. Deliberate reduction in housing investment through administrative measures would lead to market failure as discussed all along.

Taking all these matters into account, the following suggestions are made for the future housing policy directions. They are basically of the three types; deregulation consistent with market oriented economic and financial policy, promotion of housing industry, and improvement in policy instruments, housing finance and housing related taxation in particular.

As emphasized, various government controls have been partially, if not totally, responsible for market distortion as partly evinced by extremely low estimates of demand, supply, and production parameters. They are detrimental to the expansion of housing production as much as to the provision of a variety of housing. Housing industry has been slow to adjust to changes in input markets as well as in demand. The industry is overly regulated by way of special laws; e.g., the Housing construction Promotion Law, the City

Planning Law, the Land Use Law, the Housing Supply Regulations, the National Land Use and Management Law, etc. Even the Housing Construction Promotion Law seems to serve the industry poorly, because it emphasizes on "regulating" than promoting the industry.

Two types of regulations were of particular concern; one, land use control and the other, the control over the sale price. The latter is rather pervasive as it controled the firm's cost of housing production, and thus, adversely affecting its financial position. With the price control there is no incentive for the home builders to improve quality of housing because they do not need to compete each other. Price control is also responsible for "uniformity" in housing developments, lacking diversity and variety. Home Builders would have two options to stay in business; one is to lower housing quality standards while maintaining an appropriate level of profit. The other option is to secure cheap lands in urban fringe areas, which results in distortion of spatial configuration and traffic congestion. Recently, the price ceiling system was modified to reflect cost increases in land, labor, and material, but this was only a short-term solution, and all the problems associated with the price control have remained unsolved. The system should not be eliminated overnight, however. It must be done gradually; otherwise the house price will rise without accompanying steady supply of housing units. Adequate supply of production inputs must precede before such an action is taken.

Other regulations which require revisions are those of controlling land uses, including zoning, subdivision controls, building codes, and design standards. Land conversion must also be made easy in order to increase supply of residential land. Simultaneous with these efforts, multi-purpose and mixed use of urban land must be strongly promoted, leading to a more efficient use of scarce urban land. Building codes and design standards must also be revised to allow for mixed developments. Zoning and land use

regulations need to be modified for promoting commercial and residential mix in urban development.

Secondly, the housing industry must be actively promoted. Most important is to strengthen the housing finance system in order to help the small and medium sized builders actively participate in housing development. The key strategy is to have many capable firms compete in quality housing production. Tax incentives are more effective in promoting the industry. They can be used to discourage production of luxury units and to promote low and moderate housing construction. Both local and national taxes can be combined to maximize the effects of tax incentives and disincentives. Studies may be required to determine the degree to which different types of tax will affect housing market, with particular emphasis on production, price, and supply.

Both financial and taxation tools can be employed to indirectly manage housing demand. For example, when excess demand occurs, one can adjust lending terms to reduce it. Similarly, when one either overconsumes or underconsumes housing, tax measures can be used to "normalize" housing consumption behavior. Up to now, however, these tools are not developed. One must realize that improvement in housing finance, both in volume and in allocative efficiency, is the key to effective housing policy.

The other important issue is the way how these policies are reconciled with those dealing with the national economy. The macro-economic policy, as briefly reviewed, is very likely to discourage housing investment deliberately. However, any arbitrary measures to substantially reduce housing investment may pose serious problems when the society demands more and better housing. If such a demand is tightly controlled, housing situation will get worse as evidenced in the 80's. Housing investment basically represents the average propensity to consume for housing, and thus, it should be considered as an anticipated aggregate consumption for housing. This

accelerates with rise in income. One must realize that housing investment is, therefore, affected by the underlying pattern of household demand for housing. What the government must do is to moderate housing investment in a manner that is consistent with the national economic policy direction, e.g., policies such as economic stabilization abd full employment. The government must be a moderator and facilitator rather than a regulator.

3. National Plan of Action

Korea has achieved remarkable economic growth over the past three decades. In the process of economic development in Korea, however, housing investment has been given with a low priority. We have learned that economic development by itself does not necessarily improve housing conditions for all because of inequitable income distribution. In other words, there should be a conscious effort in national policy to improve the quality of life commensurate with economic growth.

Korea still has pressing housing problems yet to be solved, the most serious one being shortage of housing in large cities especially for low-income households. In order to improve the housing conditions for the urban poor, the government is proposing two programs for the next five years: urban renewal and public rental housing construction.

1) Urban Renewal

Realizing the seriousness of the situation, the Korean government set the improvement of the living quality as the primary objectives within the general welfare of the citizens, and attempts to upgrade and eliminate the substandard housing through the enactment of Urban

Renewal Act.

Residential renewal is, by definition, a planning strategy which forces a planned change in a portion of city's residential areas, where structures within them are obsolete due to the changes in the socio-economic fabric of the city's micro structure.

In earlier days, urban renewal was primarily concerned with the improvement in the physical quality of the neighborhood. In recent years, however, the concept has expanded to comprehend not only the physical aspects, but also the socio-economic elements such as employment, education, and health, thus evolving as a truly comprehensive community renewal.

The first urban residential renewal in Korea can be traced back to the early efforts to reconstruct and revitalize the city after the Korean War. The issue became acute during the sixties when illegal squatter problem drew heavy attention with the rapid progress of urbanization. Soaring land prices and inherent changes in the urban land use structures during the 1970s brought wider attention to the problem of squatter development.

Together with the concern about the squatter settlements, the urban renewal in the '70s also paid attention to the deterioration of regular housing stocks and nonconforming(unsuitable) uses in the residential areas. Once restricted narrowly to the improvement of housing quality, the urban renewal thus became a critical part of the general urban planning activities in Korea.

Various approaches have been taken since the '50s to alleviate the substandard housing problems; clearance and relocation, clearance and rebuilding on sites, on-site improvement, authorization of the property rights, etc. However, none have been successful in solving the core of the problem. Residents of the renewal districts are, in general, urban poor who are not able to bear the cost and consequently receive benefits through urban renewal programs unless there are substantial pecuniary supports from the

government or other public entities. On the contrary, the past urban renewal programs lessened the opportunity of getting affordable housing services for the urban poor, and consequently deteriorated vitalized their living conditions. Urban renewal programs are, therefore, often accused of on the ground that they worsen the situation for the urban poor rather than alleviating them.

More specifically, excessive burden on each household of the renewal cost severely restricts the possibility of receiving the benefits of renewal by the original residents. This is due to the transfer of most renewal costs to individual households in the absence adequate financial support from public bodies. Consequently the households not capable of bearing the financial burdens are inevitably forced to move out to other poor residential districts. From the residents' point of view, therefore, their housing level remains unchanged while the benefits of renewal projects are allowed to the newly arriving higher income households.

Second, despite the evident improvements in the housing service levels through the implementation of renewal projects, the range of housing choice available for low-income households is severely reduced by shrinking the inexpensive housing stock.

Third, the lack of interim housing arrangements during the implementation or renewal projects adds extra financial burden for each affected household and expedite the moving of the native residents.

Fourth, the abrupt relocation of the socio-economically, homogeneous neighborhood groups severely damages their social relations with each other and might lead into a undesirable social unrest.

The achievement of economic growth and international competitiveness, however, will be unsustainable without providing the citizen's basic necessity. Especially housing welfare appears to be the most desperate single welfare item of the ordinary Korean

minimum standard for housing marks the starting point for
In order to achieve effective housing strategies for squatter
unplanned housing areas. It should be emphasized that both
appropriate minimum standards for housing.

have access to shelter which is healthy, safe, secure and
is a basic human right. Without such shelter humans become less
In this light, forced evictions in redevelopment areas if
unavoidable, should be implemented in a just and humane manner,
matter good the intention of the redevelopment project is, repressive
is unjustifiable. Evictions should be limited only to inevitable
such as living in areas where lives are in danger, for example an
area damaged by floods or a natural disaster.

In very few cases, evictees and tenants in urban renewal
are provided temporary living shelter for the three to five years
the public housing is complete, which is one of the many
areas usually strongly objects to governmental redevelopment projects.
To tackle this problem, the government has encouragd a new urban
renewal scheme the so-called "circular redevelopment method" which secures
temporary living facilities for evictees and tenants in slum clearance areas.
Under the circular renewal method, an evictee from a development area
undergoing renewal construction is provided temporary shelter in a newly
redeveloped area. This method guarantees the evictee temporary living
facilities during the years necessary to redevelop the renewal areas. This
method seems desirable. But only a few projects are underway because
local governments lack funding for such a "circular method". It
goes forth the role of the central government is important, especially
providing local governments with financial resources. The circular
should be extended to all evictees.

families and to all cities as on e of alternatives in the future.

The housing problem has to be understood from the community point of view. The term 'community participation' is almost unavoidable in discussions of low-income housing. There must be ways in which whole community can participate in the important decision-making processes such as designating redevelopment projects. A cooperative agreement process involving the community and the government has to set up.

There are approximately 160 redevelopment areas with 63,000 units in Korea. In order to improve the housing welfare of the low-income households, urban renewal is inevitable in the future. Through the amendment of Urban Renewal in 1995, affordable small-sized sales and rental housing will be provided, and temporary shelter will also be provided before the demolition.

Seoul Metropolitan Government will evaluate the urban renewal projects with special emphasis on socio-economic changes and resettlements rate of the residents.

2. Provision of Low-Rent Public Rental Housing

Housing problems in Korea can be defined as housing shortage, housing price inflation, speculation and a short supply of residential land. Obviously, these problems are all closely interrelated; there is a short supply of housing resulting from that of residential land, which in turn causes speculators into housing market.

Housing price inflation has created intense conflict between the haves and the have-nots. The acute unfairness of income distribution has formed two new classes; those who have their own house and those who do not. Due to the rise of housing prices, those who own their houses now have a small fortune without making any effort. On the contrary, those who do not have their own houses have complained

bitterly about the rapid rise of housing prices which makes it harder and harder to own one's own house. Another outcome for a housing price inflation was weakening housing affordability for a great number of people and increasing over-crowdness of dwelling, especially for low-income households.

During the 1970s, the government housing program emphasized the construction of small-sized owner-occupied dwelling, not necessarily for low-income families. The government, then, switched to rental housing programs, which are proposed to be an alternative to home ownership programs. Rental housing programs certainly helped low-income households improve the quality of their housing but the number of rental units provided was not large enough to reach the majority of the target group.

Accordingly, the government, as mentioned in the previous chapter, launched Two Million Housing Construction Plan over a five year period of 1988-1992. In implementing the plan, the government took charge in providing 190,000 units of public rental housing for the lowest-income households.

Significant housing improvement, as described in Part Ⅲ, have been made throug the provision of public rental housing. The residents are very much satisfied with the present housing conditions, espeicially with availability of such facilities as flush toilet, modern kitchen, and hot water. For example, the benefit is estimated approximately 239 thousand won per month in Seoul. However, there are two problems associated with public rental housing. One is continuity of public rental housing program and the other is equity problem.

In Korea, 50.6 percent of households are rental status in 1990. However, there is only 490 thousand units of public or publicly assisted rental housing or 5.4 percent of the total housing stock. In other words, most of the renters share a housing with home owners. In order to improve housing welfare and to reduce rental burdern for

the low-income households, Korea needs more public rental housing. Public rental housing stock should be expanded up to ten percent of the housing stock.

The second issue is equity problem. Limiting benefits to welfare receipients have raised equity questions among the displaced people who have been uprooted from their previous houses by urban development activities. In addition, there are many other low-income households who are not designated as welfare recipient.

In order to increase public rental housing stock and to resolve equity problems among the low-income households, the government initiated Type II public rental housing in 1994. A construction of 20 thousand units a year for the next five years are initially planned. As described in Table III-1 the difference between Type I and Type II public rental housing is size of the unit, rent level, and eligibility criteria.

Table III-1 Comparision of Type I and Type II Public Rental Housing

	Type I	Type II
Construction Body	Local Govn't KNHC	Local Govn't KNHC
Supply Plan	Completed in 1992	20thousand unit a year for the next 5 years
Dwelling Size	25-40㎡	40-60㎡
Financing	Govn't Contribution:85% Tenant Deposit:15%	NHF: 70%[1] Tenant Deposit:30%
Rent Level	30% of market rent	'50% of market rent

1) NHF provides loan up to 70 percent of the construction cost at a annual rate of 3 percent

Through the provison of type II public rental housing, improvement of housing conditions of low-income households are expected. As for the monitoring and evaluation of type II public rental housing, KRIHS is resposible.