[E/ESCAP] DP/EDRS/10

ENVIRONMENT AND DEVELOPMENT

REGIONAL SEMINAR ON ALTERNATIVE PATTERNS OF DEVELOPMENT AND LIFE-STYLES IN ASIA AND THE PACIFIC

14-18 August 1979
Bangkok

E/ESCAP/DP/EDRS/10

ENGLISH

United Nations
Economic and Social Commission
for Asia and the Pacific
(ESCAP)

United Nations
Environment Programme
(UNEP)

"Not only additional constraints but also new development possibilities are at the heart of environmental considerations"

ECONOMIC AND SOCIAL COMMISSION FOR
ASIA AND THE PACIFIC

UNITED NATIONS ENVIRONMENT PROGRAMME

Symbol number: DP/EDRS/10
Distribution: Limited
4 July 1979
ORIGINAL : ENGLISH

ENVIRONMENT AND DEVELOPMENT:
REGIONAL SEMINAR ON ALTERNATIVE PATTERNS OF DEVELOPMENT
AND LIFE-STYLES IN ASIA AND THE PACIFIC

TOPIC PAPER

INDUSTRIAL DEVELOPMENT STRATEGIES AND RURAL-URBAN IMBALANCES IN ASIA: SELECTED CASE STUDIES AND AN OVERVIEW

BY

KOICHI MERA

This paper was prepared by Koichi Mera, University of Tsukuba, Ibaraki, Japan. The views expressed in it are those of the author and do not necessarily reflect those of the United Nations or the institution with which the author is associated.

ABSTRACT

Most developing countries are characterized by dualistic structures and rural-urban imbalances. In this paper, these imbalances are discussed with specific reference to the development strategies pursued respectively by Sri Lanka, Japan, the Republic of Korea and China.

Sri Lanka has placed a high priority on equality and social welfare programmes. Its development has been reasonably successful in achieving rural-urban balance but has been accompanied by slow growth, little structural change, a low degree of urbanization, and unemployment, resulting in a growing imbalance between population and productive capacity.

Contrary to Sri Lanka, Japan concentrated from the beginning of the Meiji era on "industrial-urban development". A reasonable spatial balance was achieved as the result of industrial development which drew much of the surplus rural labour off the land and into the urban areas; agricultural development through improvements in productivity and on the basis of a rather egalitarian pattern of land-holding, particularly in the post-war period; and redistributive policies of taxes, subsidies and price adjustments favouring the rural areas. Other factors were important such as political stability, protection of domestic industries, high general levels of saving and investment, high infrastructural investment, and buoyant export demand, all of which favoured rapid development.

The Republic of Korea has followed a pattern of "industrial-urban development" on the pattern of Japan. The country started to industrialize much later but was assisted by many factors such as high literacy, a modern education system, social stability, extensive post-war land reform, moderate population growth, centralized decision-making, national cohesion resulting from pervasive concerns over security, and a "market-oriented economy". Policies which specifically favoured rural-urban balance were the creation of a good nation wide road network, the spread of industry through the creation of estates throughout the country, the Saemaul Undong ("New Community") movement in the Korean villages, and pricing policies leading to improving terms of trade for the rural areas. Quantitative analysis also reveals that policy measures that were spatially non-selective played an important part in raising levels of welfare throughout the country.

The Chinese experience is potentially of great significance for other developing Asian countries, but its development was dependent upon a strong, ideologically motivated leadership and a government with very wide powers; a national concensus on goals and priorities; and substantial land, population and other resources. Rural-urban balance in China seems to have been achieved through a dual strategy of capital intensity on one hand, contributing significantly to over-all economic expansion, and on the other hand, the intensification and modernization of agriculture, in part through the use of the products of rural industry.

Rural-urban equality is only one of the goals of development; moreover, there cannot be a universal strategy for all developing countries in the achievement of greater equality. However, certain ingredients appear to be essential: the spread of mass education to rural areas, population control, a multi-faceted approach to industrial development (ensuring a wide spatial allocation of industries which are entirely compatible with local conditions), as well as a national concensus on goals, social cohesion and political stability.

Contents

I. INTRODUCTION

In most of the developing countries, low levels of industrial development, coupled with high population growth rates, low productivity in the agricultural sector, and unequal patterns of land ownership, have resulted in various developmental problems; mainly, a surplus rural labour force, rural poverty, "pseudo-urbanization", and inequalities between regions, between sectors and between individuals. In these countries, industrial development has rarely been able to grow to a degree where the surplus labour force could be absorbed within a desired length of time and bring about interregional, intersectoral (e.g., rural versus urban), and interpersonal equality as well as aggregate national economic growth. Industries in these countries have been mostly large-scale, modern and capital-intensive, with non-competitive but institutionally set wages and with non-indigenous technology. They have been characterized by relatively high wages and high productivity on one hand; and, on the other hand, by their enclave nature with minimum complementary linkages with small-scale industries, with low multiplier effect and low labour absorption capacity. In these countries the growth in the industrial sector did not have a trickle-down effect to the degree expected by many, and did not bring about nation-wide economic well-being. Thus, most of the developing countries can be characterized by dualism, including rural-urban imbalance which is the topic discussed in this paper.

In this paper, several case studies for those countries in the ESCAP region, which have been successful in narrowing urban-rural disparities will be presented. Particular attention will be given to Sri Lanka, Japan, and the Republic of Korea, and to some extent to the unique experience of China. Even though all the first three countries have been successful in narrowing rural-urban disparities, their approaches are different. Japan and the Republic of Korea will provide us with examples where industrial-urban development was emphasized, and where industrial-urban development could bring about both the aggregate economic growth and interregional, intersectoral, and interpersonal equality - where inequalities have been only temporary problems on the way to nation-wide full development. In Japan and the Republic of Korea, rural-urban disparities have been narrowed mainly by the trickling-down process from industrial-urban to the agricultural-rural sector. Sri Lanka will provide us with a case where urban and rural

/disparities

disparities are narrowed by emphasizing equality in development and thereby paying particular attention to agricultural-rural development. Thus these two sets of countries provide us with two alternative ways to narrow rural-urban differences. They present us with examples where industrial or agricultural development could decrease rural-urban disparities. However, attention should also be given to other factors indispensable to the success of either approach such as reduced population growth, an educated population, increased productivity in agriculture, and rather equitable ownership of agricultural land. They also provide us with examples with possible consequent problems which could result from single-mindedly pursuing either one of these alternative approaches.

The study of Japan can indicate to us mainly the sacrifices a developing nation - especially with low financial resources - must undergo on the way to its industrial development, and the necessary accompanying conditions and factors. The study of the Republic of Korea indicates that the Japanese model can be repeated elsewhere - if certain conditions are met - and the period of sacrifices in terms of urban-rural imbalances could be shortened by application of proper policies at the proper time. The study of Sri Lanka can indicate mainly the possible problems which can arise if developing countries - with high population density, and with population growth above replacement level - single-mindedly pursue agricultural-rural development and rather neglect industrial-urban development. Thus, the study of Sri Lanka can indicate to developing countries which are considering emphasizing agricultural-rural development, the possible consequential problems they may face and how to avoid these problems.

For Sri Lanka and Japan, their development experiences have been reviewed and summarized on the basis of available documents, but for the Republic of Korea, an original study has been undertaken to evaluate the effectiveness of some particular policies employed for reducing urban-rural imbalances.

In the last section, these alternative approaches will be compared with the one adopted by China, as it is believed by many that China has solved successfully the two major problems of development, namely the achievement of economic growth and the attainment of a satisfactory distribution of economic benefits, during the past two and a half decades. The success story of China will be qualified on the basis of available information and

/the

the applicability of the Chinese approach to other Asian and Pacific developing countries will be examined. Through comparison of the Chinese approach with those of Sri Lanka, Japan and the Republic of Korea, several concluding remarks will be made.

II. THE CASE OF SRI LANKA[1/]

1. The pattern of development

Sri Lanka has an area of approximately 66,000 km^2, a population of about 13 million with the resultant average population density of 200 persons/km^2, and a population growth rate of 1.9 per cent. About 80 per cent of its population, 10 years old and over, are literate.

Sri Lanka gained its independence in 1948 by orderly transition from colonial rule to an independent government with parliamentary rule. Compulsory education had been introduced at the turn of the century, resulting in a literacy rate of 70.1 per cent for males and 43.8 per cent for females in 1946. "As an independent nation, Sri Lanka got off to an auspicious start with a sound balance-of-payments position, a government budget with a comfortable current account surplus and a standard of living which rivalled the best in the countries of South and South-East Asia" (Marga Institute, 1978, p.3).

Contrary to Japan, social welfare programmes, rather than industrial development, have been the main focus of government policy since the days of the Depression. Likewise, rural development, rather than urban development, and decentralized decision making, and dispersed public facilities and services have been explicit government policies:

> "The ever-growing social welfare commitments prior to independence were to set inescapable constraints on the future strategies of the national political parties and their willingness as well as capacity to concentrate on economic growth. The inexorable expansion of the social services to provide for a rapidly growing population was to present a continuing dilemma for political leaders and policy makers. The conflicting claims of welfare-oriented policies and development goals were to be a recurrent theme in the development drama of the next two decades" (Marga Institute, 1978, p. 4)

/Table 1.

1/ Three sources have been mainly used for this country study. All of them are excellent studies with much insight and detail. Their authors are Marga Institute (1978), S.P.F. Senaratne and E. Wanigasekara (1978), and M.S. Alif (1978).

Table 1. Sri Lanka, Japan and the Republic of Korea: selected development indicators

		1955	1960	1965	1970	1975
1.	Urbanization (percentage)					
	Sri Lanka	21.6	n.a.	21.8	22.3	n.a.
	Japan	56.3	63.5	68.1	72.2	75.0
	Republic of Korea	24.4	28.3	33.9	43.1	50.9
2.	Adult literary rate					
	Sri Lanka	n.a.	61	n.a.	n.a.	78
	Japan	n.a.	98	n.a.	n.a.	99
	Republic of Korea	n.a.	71	n.a.	n.a.	92
3.	GNP (per capita $US; 1975 prices)					
	Sri Lanka	n.a.	135	140	168	190
	Japan	561	856	1,551	2,646	4,390
	Republic of Korea	138	150	182	337	532
4.	Share of agriculture in GNP (percentage)					
	Sri Lanka	n.a.	39.1	n.a.	35.0	n.a.
	Japan	n.a.	10.1	7.0	4.7	4.0
	Republic of Korea	n.a.	35.9	36.7	26.2	24.0
5.	Percentage of non-agricultural income in income of farm households					
	Sri Lanka	n.a.	n.a.	n.a.	n.a.	n.a.
	Japan	29.5	45.0	52.0	63.5	66.4
	Republic of Korea	n.a.	n.a.	22.1	24.1	18.1

Sources: Song, UNCRD, November 1977, pp. 32, 10, 42, 45; Senaratne and Wanigasekara, p. 4; World Bank, World Development Indicators, June 1978.

/As

As a consequence, we observe the following characteristics in Sri Lanka's case: fair to sluggish growth of the economy; relatively little structural change in the economy where the dominant sector is agriculture; spatial and sectoral equality in terms of job availability, per capita incomes, services and facilities; low degree of urbanization with almost no change over time in the percentage of population living in the urban areas; and high percentage of unemployment.

These points are further explained below:

(a) Fair to sluggish growth of the economy

During the period between 1950 and 1971, the rate of growth of the economy was low, ranging annually between 3.9 and 4.5 per cent (Senaratne and Wanigasekara, 1978, p. 3), but it is reported that the growth of the economy has been even slower since 1970. The World Bank reports that the average annual growth rate of GDP from 1960 to 1970 was 4.6 per cent and that from 1970 to 1976 was 2.9 per cent (World Bank, 1978, p. 8).

(b) Relatively little structural change in the economy

Since independence, there has been relatively little structural change in the economy, where agriculture has always been the dominant sector as shown below:2/

		Agriculture	Manufacturing
Share in the national output (percentage)	1959	39.1	11.6
	1970	35.0	13.8
Share in the work force (percentage)	1946	53.8	10.1
	1970	51.6	10.6

Source: Senaratne and Wanigasekara, 1978, p. 3.

/(c)

2/ The figures given by Senaratne and Wanigasekara might be biased and exaggerate the lack of structural change. For example, Blackton notes that the share of agriculture in GNP fell from 44 per cent in 1949 to 33 per cent in 1972 and that of manufacturing rose from 9 per cent to 13.6 per cent during the same period (Blackton, 1974, p. 6). However, another source says that the share of agriculture in GDP was 38 per cent in 1960 and 37 per cent in 1976 and that of industry 16 per cent and 21 per cent, respectively (World Bank, 1978, p. 10). These figures can be interpreted to indicate that the structural change has been particularly slow since 1960, if not before.

(c) Spatial and sectoral equity

The Government's policy has been explicit about narrowing the gap between urban and rural areas of the country. In national policies, there has been continual, strong emphasis on decreasing the differences "in the access to and utilization of the social welfare benefits" (Marga Institute, 1978, p. 45 and pp. 34-35). The minimum weekly rice ration and food subsidies helped to promote rural-urban balance in nutritional standards (Senaratne and Wanigasekara, 1978, p. 40). As early as in 1944, the Government introduced a free health service and education facilities which covered the entire country including remote rural areas. Furthermore, growth of urban centres in the rural areas of the country and high levels of accessibility in rural areas facilitated equal distribution of social amenities. As a result, differences in fertility and mortality rates, and levels of education have been insignificant. We do not observe any wide disparities between urban and rural incomes.[3/] Increase in employment opportunities has been mainly in the agriculture sector; "much of the additional employment in the tertiary sector ... originated from the expansion of employment in the agricultural sector" (Senaratne and Wanigasekara, 1978, p. 28).

It has been claimed by many that Sri Lanka achieved remarkable improvements in income distribution during the period from 1963 to 1973 (Jayawardena, 1974 and Karunatilake, 1974). The claims are based on income data in Surveys of Ceylon's Consumer Finances conducted by Central Bank of Sri Lanka. According to them, the average income of a rural worker relative to that of an urban worker increased from 50 per cent in 1963 to 70 per cent in 1973, and during this period the bottom 60 per cent of income receivers in the rural as well as the urban sector had a higher growth rate of income than the top 40 per cent. This performance of Sri Lanka is quite noteworthy particularly because this degree of equalization was achieved simultaneously with a fair degree of economic growth such as 4.6 per cent per year. However, considerable doubt has been cast on the extent of

/equalization

3/ Sri Lanka: comparison of urban-rural income indicators

	Urban	Rural	Rural/Urban (percentage)
Household income per month (1969/1970)	Rs 235.00	Rs 196.00	83
Average income per spending unit (1973)	Rs 794.71	Rs 582.14	73
Average income per income receiver (1973)	Rs 632.68	Rs 446.48	71
Average per capita income (1973)	Rs 151.37	Rs 108.41	72

Source: Marga Institute, 1978.

equalization claimed (Lee, 1977). The doubt is based on cross-examination of the income survey data with consumption expenditure surveys and real wage data.

Therefore, although Sri Lanka's case is unique among low income developing countries in attaining a high degree of equality, it may be misleading to indicate that all the above and other policies aimed at spatial and sectoral policies worked miraculously in Sri Lanka.

(d) Low degree of urbanization

"The share of the urban population in the total population has increased by only 1.6 percentage points during the twenty-five-year period" from 20.5 per cent in 1946 to 22.1 per cent in 1971[4/] (Senaratne and Wanigasekara, 1978, p. 3). Most of the increase in employment occurred in the agriculture-related sectors and the economic activity in the urban sector had grown slowly. As a consequence, Sri Lanka did not witness a "dynamic process of urban expansion that accompanies rapid economic growth" (Senaratne and Wanigasekara, 1978, p. 3).

(e) Unemployment

Since the eradication of malaria in 1947 and the consequent decline in the mortality rates, the population increased at a rapid rate. The growth of population resulted in the "expansion of work force in the 1960s as the new cohorts began to enter the labour market" (Marga Institute, 1978, p. 29). "At the same time, the modern sector of the economy both in manufacturing as well as plantation agriculture was expanding much too slowly to absorb the increments to the work force. While the rural sector that was created as a result of the resettlement programme contributed to employment generation during the 1950s, it was no longer adequate to provide opportunities on the scale required by the growing rural work force" (Senaratne and Wanigasekara, 1978, p. 28). While the work force grew at 2.4 per cent per annum, employment grew at 1.3 per cent per annum, which resulted in 1 million unemployed people in 1976 (Marga Institute, 1978, p. 29). The percentage of unemployed work force in 1970 was 16.7 per cent for urban, and 13.7 per cent for rural areas (Senaratne and Wanigasekara, 1978, p. 28; Marga Institute, 1978, p. 50).

The balance between rural and urban areas has been achieved (1) on the negative side, by a low level of pull factors in the urban areas; and (2) on the positive side, by decreased push factors in rural areas:

(a) Low level of pull factors in urban areas. Economic activities were dispersed in the agricultural sector, and the economic activities in the urban sector grew at a slower pace. Thus, urban areas did not constitute a pull in terms of employment opportunities (Senaratne and Wanigasekara, 1978, p. 28).

/(i)

4/ Urban is defined to be towns with population of over 2,000 persons.

(i) Share of industry, even though it grew, remained at about 10-13 per cent of GNP. "Manufacturing activity had little effect in creating the industrial urban environment" (Senaratne and Wanigasekara, 1978, p. 25).

(ii) Furthermore, whatever manufacturing industry there was dispersed and did not lead to urban development. "The manufacturing activities in tea and rubber, which constituted the major components of the manufacturing sector, were widely dispersed in the plantation sector" (Senaratne and Wanigasekara, 1978, p. 25). Industrial development by the State sector was in terms of several large-scale projects; "but these were dispersed as separate industrial units in different parts of the country close to sources of raw material and did not serve as important "foci" for urbanization" (Senaratne and Wanigasekara, 1978, p. 25; Marga Institute, 1978, p. 40).

(iii) "In the early 1960s the new industrial enterprises of the private sector based on import substitution and producing a wide range of industrial consumer goods grew in and around Colombo. Most of them, however, had a high import content; the local value added remained small, and the spread effects of the economic activities generated in this sector were limited" (Senaratne and Wanigasekara, 1978, p. 25; Marga Institute, 1978, pp. 48-49).

(iv) Urban sectors were mainly centres of trade, commerce and other services instead of manufacturing. Because of declines in import and export activities, trade and commerce activities could not expand. The reasons for this were declines in the income received from the principal exports, mainly tea, rubber, and coco, restrictions on imports and import substitution policies due to balance of payment problems (Senaratne and Wanigasekara, 1978, p. 26; Marga Institute 1978, p. 48).

(v) Import substitution policies in agriculture dispersed the related economic activities (such as transportation, storage, and distribution) to the rural areas. "Colombo ceased to be the sole importer and distributer of these items" (Senaratne and Wanigasekara, 1978, p. 26; Marga Institute, 1978, p. 48).

(b) Decreased push factors in rural areas

(i) Land ownership:
First, the rights of tenants were protected by the Paddy Lands Act of 1958, thus avoiding the worst features of landlordism which are observed in some Asian countries. Then, a ceiling on ownership of agricultural land was set by the Land Reform Act of 1972 to provide land to the landless agricultural population. "No individual was allowed to possess over fifty acres of land of which no more than twenty-five acres should be paddy land" (Senaratne and Wanigasekara, 1978, p. 42-43).

/The

The green revolution did not result in an exodus of small farmers (Senaratne and Wanigasekara, 1978, pp. 43-48; Marga Institute, 1978, p. 46). Land is distributed to villagers in various ways. One, "rehabilitating and resettling the arable land in the sparsely populated Dry Zone ... siphoned off some portion of the population from the densest regions" (Marga Institute, 1978, pp. 41-52). This involved massive rural-to-rural planned migration of the landless peasants from the densely populated Wet Zone which facilitated a stable man-land ratio (Senaratne and Wanigasekara, 1978, p. 34; Marga Institute, 1978, pp. 42-43).[5/] Two, land is sold to peasants who had cultivated it for permanent crops for a specified period (Senaratne and Wanigasekara, 1978, p. 32). Three, those lands under governmental control and which were "considered marginal or uneconomical for the cultivation of the major commercial crops are now being alineated for village expansion schemes" (Senaratne and Wanigasekara, 1978, p. 43).

(ii) Size of holdings:
"Size of the operational holdings has not diminished during this period. In fact, for the holdings of the smallest size the acreage has even increased marginally. There has been no significant fragmentation of holdings, on the one hand, nor consolidation, on the other. Various forms of joint ownership and cultivation in rotation have preserved the size of these holdings. But, by and large, the general picture which emerges is one of relative stability in regard to the size of the operational holdings" (Senaratne and Wanigasekara, 1978, p. 48).

(iii) Agricultural productivity:
The Government heavily emphasized increase in the productivity in agriculture by various ways: agricultural credit, subsidized agricultural inputs and services, multi-cropping and diversified farming, tractor pools etc. (Senaratne and Wanigasekara, 1978, pp. 35, 41 and 42). High levels of education of the rural work force enabled the implementation of modern and scientific methods.

(iv) Elimination of uncertainties in agricultural earnings:
Deliberate policies were put into effect in order to reduce uncertainties in the earnings from the agricultural sector. The relevant government policies were mainly guaranteed price schemes and crop insurance schemes (Senaratne and Wanigasekara, 1978, p. 42).

/(v)

5/ "The pace of colonization of the Dry Zone went on uninterrupted. Between 1946 and 1971 out of an increased extent of 650,000 acres of agricultural land in the island, 535,000 acres comprised additional land brought under cultivation in the Dry Zone through colnoization schemes ... The division of the country's largest river, the Mahaveli, will develop approximately one million acres in the Dry Zone of which 300,000 are already cultivated below optimum level. The first stage of the scheme, which commenced in 1971, has now been completed." (Senaratne and Wanigasekara, 1978, p. 41).

(v) Agricultural earnings:
Aside from the indirect effects of the above stated policies on the incomes of the rural population, there was a substantial increase in agricultural incomes due to import substitution of various food items which resulted in a significant rise in prices (Senaratne and Wanigasekara, 1978, p. 35).

(vi) Extra-agricultural earnings:
Extra-agricultural earnings were provided partly from the salaries of the personnel employed in public services which were dispersed in the rural areas, such as teachers, headmen, railway and bus service personnel, welfare and administrative personnel. Furthermore, agro-based and village-based industries, and tertiary activities due to transportation, storage, and distribution of agricultural products also provided significant amount of earnings. Technical schools and vocational training courses enabled youths to be productively employed in small-scale industries which were dispersed in the rural areas. Arts and crafts, mainly handloom and powerloom weaving centres provided significant increases in income. For example, "in 1968 it was estimated that almost 76 per cent of the labour force engaged in the textile industry was employed in the handloom sector" (Marga Institute, 1978, p. 17).

(vii) Social welfare policies:
Social welfare policies were directed to eliminate poverty and to provide equal access to public facilities and services. Food subsidy and various consumer subsidy policies were implemented. Free educational and health facilities and services were dispersed through entire rural area.

The emphasis on rural development and persistent efforts to achieve urban-rural balance were accompanied by a political-institutional setting which had the following characteristics: various village-level institutions, a highly decentralized administrative system, strong political conciousness among the rural masses, public participation in decision making, and effective predominance of rural representation in Parliament (Senaratne and Wanigasekara, 1978, p. 37). Aside from the political-institutional setting, another factor which enabled the Government to carry out its policies was the transfer of resources generated by the plantation sector (which was largely a high productivity sector) "to the low-productivity sector in domestic peasant agriculture and thereby implement a multi-faceted programme designed at improving the living conditions of the people in the traditional rural areas" (Senaratne and Wanigasekara, 1978, p. 34).

2. The implications of the strategy chosen

Sri Lanka can be considered as not particularly noteworthy from the point of view of economic development but probably as a success from the point of view of achieving urban-rural balance, attaining social welfare and the elimination of poverty, as stated by Marga Institute:

> "Conflicting appraisals have been made of Sri Lanka's social and economic performance since independence. As these are based on different analytical approaches, the conclusions arrived at are fundamentally different. During the 1960s when its growth rate hovered around 4 per cent, Sri Lanka was often cited as an example of "a development failure" in that it had mismanaged its economy and reversed the order of priorities by financing massive social welfare programmes at the expense of economic growth investment and savings.
>
> "In the late 1960s there was a shift in the outlook on development and emphasis began to be laid on the need to combine the processes which accelerate growth and expand output and the processes which lead to more equitable access to resources and better distribution of the benefits of growth. In this context Sri Lanka's experience has been upheld as a "development success" in that its pattern of development has been anti-poverty in its orientation. Its positive achievements in the field of human and social development have prompted many to evaluate its experience as a "success" in terms of the new comprehensive criteria of development.
>
> "Sri Lanka's performance ... however demonstrates that her outstanding social achievements, when juxtaposed against the negative features which accompanied them, rest on insecure foundations - a persistently low economic growth rate accompanied by inadequate savings and capital formation, massive unemployment, negligible industrial growth, a growing burden of external debt and heavy dependence on imports for a significant share of essential consumption goods.
>
> "The truth in relation to her performance would thus appear to lie somewhere between the dismal failure and the spectacular success which conflicting appraisals have either condemned or lauded." (Marga Institute, 1978, p. 30.)

However, in a longer term analysis, the country appears to be heading toward a dismal future rather than a promising one if past policies are to be continued. Insufficient growth in the industrial and modern sectors of the economy, accompanied by annual population growth rate of about 2 per cent is resulting in "growing imbalance between population and productive capacity" (Marga Institute, 1978, p. 28). The present rate of unemployment which is already high is bound to increase in the future and the growing

/burden

burden of external debt (which was mainly due to a decline in the relative price of the country's agricultural exports; and the necessity to import some of the food requirements of the country) cannot be reversed within the foreseeable future unless a drastic polidy change takes place.6/

III. THE CASE OF JAPAN

1. The pattern of development

Japan has a population of 112 million (1975) which makes it the sixth largest nation in the world, and an area of 370,000 sq km. About 80 per cent of the land is mountainous and is scarcely inhabited. Therefore, the density of human settlements is one of the world's highest. Population density per km^2 of habitable land is 1,400 persons. Historically and also at the present, human settlements have been concentrated in areas along the sea coasts, where rivers flow into the sea and the land is relatively flat. The nation began to modernize in 1868 at the beginning of what is called the Meiji era.

Japan presents, in a way, a case opposite to that of Sri Lanka. Since the beginning of Meiji era, Japan clearly make a decision in favour of industrial-urban development and it was carried out consistently. Japan followed "a strategy which almost blindly concentrated all resources and efforts into one single pursuit" (OECD, 1971, p. 68). The rural sector, however, in the initial phases of industrialization served to foster

/industrialization.

6/ "As the country's structure of agricultural production was heavily oriented to primary export commodities, the domestic output of food in 1953 was able to satisfy only 82.1 per cent of the national requirement. Although there has been an increase in production during the subsequent two decades, in 1973 food imports to the value of about 22.8 per cent of the requirements had to be still resorted to, to feed a population which had increased by 62.4 per cent. The net result of these commitments combined with the persistent decline in the purchasing power of exports has been a massive deficit in the country's balance of payment which has to be met through external borrowing and development assistance. At the end of 1975 the long-term external debt had reached Rs 3,704.9 million which was approximately 89 per cent of the average export earnings in 1974 and 1975" (Marga Institute, 1978, p. 29). It can be interpreted that these difficulties had caused the socialist administration to lose in the last national election.

industrialization. Revenues from the primary export sector were used to build up industry. Furthermore, the rural sector fostered industrialization because it had a large body of workers who were willing to work for low wages, thus enabling Japan to compete in the foreign markets.[7/] The rural-urban balance was not a serious concern until recently and by that time it was possible to achieve it as a consequence of high industrial development, by the trickling down process across the space and sectors.

Economic development through industrialization was carried out with a top-down approach; aggregate national growth and development predominated over concerns about intersectoral and interregional equity; "grow first and distribute later" was the motto. Policy-makers apparently thought that growth maximization eventually would solve problems of inequality, and open and disguised unemployment. Unlike Sri Lanka, "social overhead capital or welfare arrangements were the least of the policy-makers" worries ... in the 1950s it was actually felt that social overhead capital formation implied a waste of resources" (OECD, 1971, p. 69). More balanced development and equity were considered to be in conflict with over-all growth. These goals were "proclaimed by the Japan's ruling elite, but were accepted and widely admired with in Japanese society" (Glickman, 1977, p. 9). The economic system was predominantly private enterprise-free market, and not a socialist economy.

Industrially-led development during the period since 1945 led to (a) very rapid economic growth where the growth rate of GNP was about 10 per cent for two decades until 1973; (b) very low levels of unemployment of about 1 per cent or less; and consequently (c) interregional, intersectoral (including urban-rural) and inter-personal per capita

/income

7/ "This willing frugality on the part of Japan's large agricultural population has been in the past one of the country's greatest assets in its industrial competition with the Occident, for it operated to keep industrial wages low and thus permitted the Japanese manufacturer to compete" (Trewartha, 1965, p. 149; and also see Kornhauser, 1976, pp. 105-106).

income disparities which initially widened, but eventually converged.[8/]

As a consequence of rapid industrialization, we observe - contrary to Sri Lanka's case - high and very rapid levels of urbanization, and structural changes in the economy. Between 1955 and 1968, the farm population decreased at a rate of 800,000 per year. By 1975, only about 15 per cent of the population lived in rural areas. Between 1965 and 1971, the share of labour in the primary sector fell from 41.9 to 17.4 per cent; but there was an increase in the share of the manufacturing sector from 17.7 to 27.2 per cent (OECD, 1971, p. 8).

/Table 2.

8/ In the period since 1945 various measures of per capita income disparities increased until early 1960s, then converged. Range of income disparity (i.e., the difference between the highest and the lowest indexes of prefectural per capita personal income when the national average is set at 100) and coefficient of variation (i.e., the unweighted coefficient of variation of all prefectural per capita incomes) decreased about 30 per cent between early 1960s and 1974 (Hera, 1978a, p. 159). In 1965 the population of the regions where the per capita income was less than 80 per cent of the national average was only 22 per cent; there was no region where the per capita income was less than 75 per cent of the national average. On the other hand, in Italy, in the Mezzogiorno, which has 38 per cent of the Italian population, the per capita income is 68 per cent of the national average. Income disparity, throughout the 1960s, between the richest and the poorest prefectures remained about 3 to 1. For example, in 1960, while the national average per capita income was $US 308, it was $US 636 for Tokyo and $US 192 for Kagoshima (in 1967 the per capita incomes increased to $US 548, $US 1,533, and $US 536, respectively) (OECD, 1971, pp. 9-10 and 132 in Gidik, 1978, p. 33).

During 1960-1968, the average monthly income increased by 180 per cent for farm households, and by 118 per cent for urban employee's households (OECD, 1971, p. 9).

According to a study by Sawyer (1975), Japan seemed to be among the countries (along with Sweden and Australia) with most egalitarian income distribution as measured, e.g., by the Gini coefficient (Glickman, 1977, p. 10).

Table 2. Indexes of inter-prefectural income disparities

	ID1	ID2
1954		
1955	93.9	0.18
1956	99.1	0.20
1957	93.3	0.20
1958	91.2	0.19
1959	93.7	0.19
1960	94.1	0.19
1961	99.5	0.20
1962	97.8	0.20
1963	92.8	0.20
1964	90.8	0.19
1965	84.9	0.17
1966	83.2	0.16
1967	80.0	0.16
1968	78.5	0.15
1969	78.3	0.15
1970	77.9	0.16
1971	73.3	0.15
1972	71.1	0.15
1973	66.8	0.13
1974	65.8	0.13
1975		

Source: Mera, 1978a, p. 159.

Notes: ID1: The range of income disparities as defined by the difference between the highest and the lowest indexes of provincial per capita personal income when the national average is set at 100.

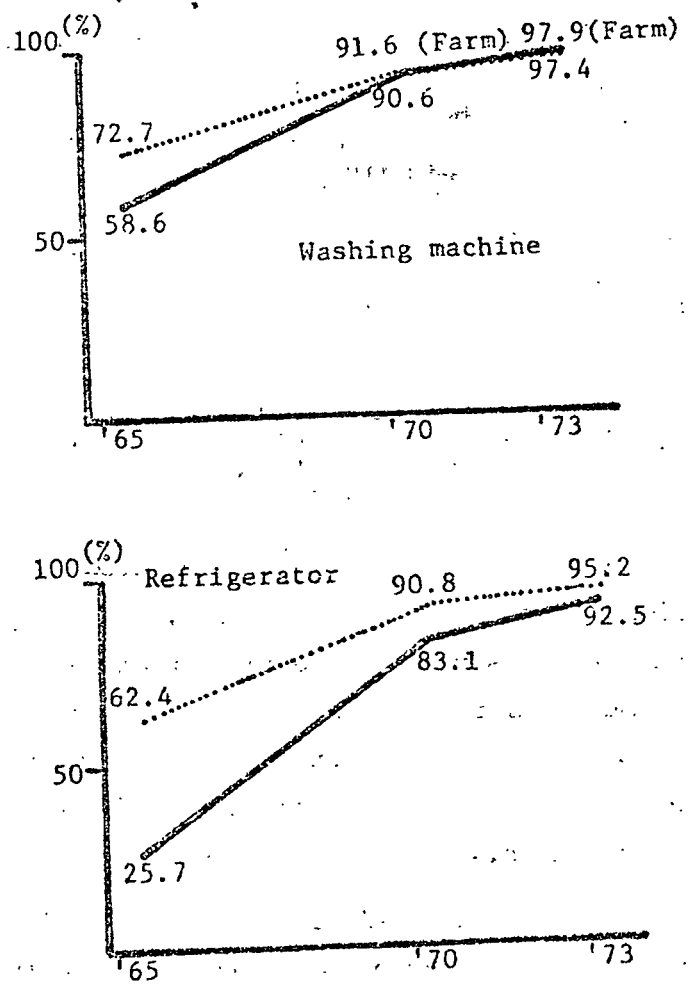
ID2: The unweighted coefficient of variation of all provincial per capita personal incomes.

/As

As has been represented by declining urban-rural income disparity since the beginning of the 1960s, the urban way of life penetrated even to the most remote rural areas particularly during the 1970s. Rural areas increasingly acquired public facilities and services. Fruits of the development of the country spread throughout the whole Japanese archipelago:

> "The vigour of Japanese economic expansion in the post-war period, especially after 1955, has been so remarkable, and the burgeoning of the secondary and tertiary industrial sectors so spectacular, that the growth of agriculture and of primary pursuits in general has tended to seem of less significance. Yet agriculture also has realized many unprecedented gains, both in over-all efficiency and in the status of its practitioners. The once economically downtrodden farming class, for example, has been almost entirely replaced by a relatively affluent, landowning, rural middle class, and gone are such traditional agrarian scourges as the absentee landlord and the wretched tenant. Signs of affluence in the countryside are everywhere at hand in new buildings, new vehicles and accountrements, frivolous as well as professional, and in a general aura of well-being never before seen in such surroundings. The basic picture may be much the same but many details are new and perhaps hidden, especially to the uninitiated. There is still much validity in a basic description of small plots, carefully tended and of enormous variety, interpersed with tidy but narrow lanes of access, intricate networks of drainage and irrigation ditches ... subtle changes as the addition of television aerials, telephone lines, improved roads and irrigation facilities, or such as modernized kitchens with running water and possibly gas stoves, water and bath heaters, and electrical appliances or wholly new electrical systems within the home. More subtle still are the myriad changes that have come to the styles of daily living of farm families. The profession, to be sure, has played a somewhat secondary role in the general national advancement of the past decade, for individual incomes have been consistently and even increasingly less than those for urban-industrial pursuits, but the almost silent revolution within the agricultural domain remains one of the more vivid elements of success in post-war Japan, chiefly because it represents an almost complete reversal of previous circumstances" (Kornhauser, 1976, pp. 43-44).

/Figure 1.



igure 1. Changes in percentage of households owning selected durable consumer goods to total of households, farm

Source: Economic Survey of Farm Households, Ministry of Agriculture, Household Budget Survey, Prime Minister's Office (in Hideo Ishioka,"Japanese Village in Transportation")

Notes:

Farm

Non-farm

/2.

2. Elements of development policies

To be more precise, the rural-urban balance in Japan was achieved not only by (a) high levels of industrial development alone, but also (b) improvements in the agricultural sector, and (c) a host of redistribution policies, which can be summarized as shown below:

Industrial development	Agricultural development	Redistribution policies
1. High absorption of rural surplus labour; tightening of the labour market; and convergence of wage differences	1. Land reform	1. Tax and subsidies
2. Availability of non-agricultural jobs	2. Improvements in the agricultural productivity	2. Prices of agricultural products

The rapid and high levels of industrialization created pull and were accompanied by significant rural-to-urban migration. Not only was the surplus agricultural labour force absorbed in the industrial sector, but also a large amount of "entire family" migration took place from rural areas to the urban-industrial centres. High levels of industrialization caused tightening of labour markets and consequently convergence of intersectoral and interregional wage differentials.

Tightening of the labour market, besides rapid and high levels of industrialization, was also due to decrease of population growth rate down to approximately 1 per cent,[9/] i.e., to the replacement level, both in urban and rural areas[10/] (Tachi, 1971, p. 6). In rural areas, decrease in population growth plus the selectivity of the rural-to-urban migrants of young and fertile age caused very low and even negative natural growth rates.[11/] As a consequence, in rural areas, we not only do not observe

/overpopulation

9/ Furthermore, after the return of repatriates, Japan had very restrictive policies against immigration such that the role of international migration in the population growth has been nil.

10/ At the end of the Second World War, there was a "baby boom" where average annual population growth rate was about 2.92 per cent; furthermore, by 1950, 6.2 million repatriates returned to Japan from various Asian countries. However, one decade after the end of the Second World War, that is by 1955, the economy was restored to its pre-War level, and the birth rates both in urban and rural areas decreased to approximately 1 per cent.

11/ For example, in 1965 "about six per cent of all minor administrative units in Japan have indicated reverse of vital rates, that is higher death rates than birth rates"; and 30 per cent of all minor administrative units showed "very low level of natural increase rates, less than 5.0%0 which is much lower than national level of 10.0%0" (Kuroda, 1969, pp. 9-10).

overpopulation, we observe depopulation and the consequent problems of population and labour shortage.[12/]

Another way by which industrialization helped to narrow urban-rural disparities was to provide non-agricultural jobs to the rural population. In 1974, as much as 68.7 per cent of rural households' income was from non-agricultural sources; and the fact that the amount of non-farming income was reversely proportional to the farming income helped to increase especially the income of the relatively lower income groups (Kim, 1978, p. 12).

> "Farmers have been outcompeted by urban occupations, but most have drawn heavily on employment opportunities in the city to augment and finally to dominate their farm incomes. 'Part-time' farming, performed by commuters, is the rule in Japan today, with routine chores being accomplished by women, children and the elderly" (Kornhauser, 1976, p. 52).

It was possible for the rural population to participate in non-agricultural jobs in the city areas because the growth in job opportunities in local cities in rural reginns grew more rapidly than in the metropolitan areas since the second half of the 1960s (UNCRD, 1974, in Koike and Yamamoto, 1976, p. 72). Furthermore, the rural population was able to commute because of the high degree of mobility available for most parts of the country.

The increase in job availability in nonmetropolitan areas is due to so-called "polarization reversal" phenomenon (Richardson, 1977). The reasons for this can be briefly summed up as (a) the availability of an advanced level of transportation and communication network; (b) the tightening of the labour market nation-wide and consequential convergence of wage differentials; (c) reduced economies of scale in metropolitan areas; (d) change in values in favour of environmental amenities; (e) increase in foot-loose industries; (f) decrease in economic growth and stagnation in foreign demand, and the consequent emphasis on the domestic market (Richardson, 1977; Lo and Salih, 1978a; Mera, 1978a). Polarization reversal, in Japan, is considered to be mainly due to structural changes, and not very much due to government's intervention.

The highlight of improvements in the agricultural sector is the land reform which was carried out at the end of the Second World War (in 1946-1949) during the Occupation by the Allied Forces and which was

/later

12/ There was not only a labour force shortage in agriculture due to depopulation in rural areas, but it also became "difficult for rural communities to maintain their living standards including education, public health and environmental facilities, at a national minimum" (OECD, 1971, pp. 8 and 127).

later extended in 1952 in the Agricultural Land Law. These reforms restricted the agricultural land holdings to no more than 3 hectares for self-cultivation and to 1 hectare for rental out.

Productivity in agriculture was increased many-fold due to the application of modern technology and seed development such that even though the rural population continued to decrease, rice production continued to increase and new and hitherto-unknown quantities of surpluses were created.

Income redistribution policies in favour of the rural population have also been important factor in narrowing urban-rural disparities. These policies were in the form of (a) taxes and subsidies, and (b) pricing policies for agricultural products. Tax and subsidy systems were such that revenues collected by the central Government were allocated to local governments mainly on the basis of needs rather than the amount collected. Pricing policies for the agricultural products have been such that the rural population was assured a minimum acceptable level of income.

Previously it was stated that in Japan, urban-rural disparities were narrowed because of high levels of industrialization. Unlike other developing countries, in Japan, industrialization was mainly indigenous and self-reliant and developed very rapidly from primary-export to import-substitution and to export-oriented industries. Typically, it was from light industries (such as textiles) to heavy industry (such as petrochemical), to information industry (such as computers) in the near future; and from cottage industries to small-scale, and to large-scale industries.

It was a result of patient, step-by-step efforts, which started in Meiji era.[13/] It may be said that it took Japan approximately seventy-five years to complete its industrialization and to observe the consequent trickling-down process.[14/] During the Meiji era, there were many significant changes

/on

13/ Japanese people have been fortunate on several counts. One is their leaders at all levels of the hierarchy of the Government, have been "exemplary themselves, were careful to extol such traditional cultural values as frugality, honesty and subservience to authority, all of which were invaluable assets during the whole process of industrial modernization" (Kornhauser, 1976, p. 116). The second is at the time Japan began to modernize and industrialize, the country was already unified; the minority groups like the Ainu people were completely assimilated or were reduced to extinction so that there was no internal strife. Furthermore Japan was an independent country both politically and economically.

14/ Seventy-five years is the period from 1868 to 1960 excluding the periods of the Second World War and recovery from it of 1941 to 1955.

on the road to modernization and industrialization such as institutional modernization, establishment of a nation-wide transportation network of railways etc. But especially, the importance given to education and acquisition of sophisticated levels of Western technology is remarkable. A highly educated labour force may have been one of the most important factors for the successful industrial development of Japan.[15/] Sophisticated levels of know-how attained through technology oriented education and through borrowing technology from the Western hemisphere facilitated the development of indigenous technology. A highly educated labour force made it possible to apply a whole range of technologies in industry.

Factors other than a highly educated labour force and sophisticated levels of know-how which contributed to economic development of Japan are briefly listed below:

- Political stability, social cohesion, achievement-orientation and general consensus on the development priorities; close co-operation in the decision making between Government and private entrepreneurs.
- Protection of domestic industries, prevention of imports of consumption goods.
- High degree of savings and subsequent high degree of investment in the industrial sector.[16/]

/- Emphasis

15/ "A more important factor mentioned several times already, has been the high educational level attained by Japan's labour force .... Without a competent and increasingly skilled labour force, a good deal of the investment effort might well have been wasted (or not undertaken in the first place)" (Boltho, 1975, p. 101).

16/ Gross national savings as a percentage of GNP in current prices, rose from 23 per cent in 1953 to nearly 40 per cent in the early 1970s. There are many reasons cited for the high percentage of savings, such as payment of a part of the wages in terms of a bonus a few times a year, very low social security payments in old age (retirement), etc. But one of these reasons is said to be "consumption revolution". "Traditionally it has been argued (for instance by Nurkse or Shinohara), that Japan had succeeded in isolating itself from Western consumption habits at the same time absorbing Western techniques. The virtual absence of 'demonstration effect' on consumption, combined with the presence of a strong 'demonstration effect' on investment, meant that relatively high savings and investment ratios could be maintained", in contrast to the experience of today's developing economies (Boltho, 1975, pp. 89-90).

- Emphasis on industrialization at the expense of public services17/ and a very low level of expenditure for defence.
- High degree of concentration of public investment in those areas where apparent demands for infrastructure existed so as to achieve a high rate of return from investment.
- Rather constant and high demands for the industrial outputs in the export markets.

Here the role of small-scale industries in Japan should be stressed as a major vehicle for promoting the trickling down process. There are various reasons why the Japanese industrial goods could be sold at a competitive price, such as relatively few strikes and thus loss of fewer working days. However one of the most important reasons appears to be the complementary relationship between large-scale and small-scale industrial establishments where the latter work as subcontractors to the former. The advantages of this relationship are that the large-scale establishments are able to keep only the minimum required constant labour force with high wages for performing

/mainly

17/ The Government's social overhead investment for social well-being (such as public housing, welfare and social insurance programmes, etc.) was largely neglected. For example, in 1971, "government current expenditures as a proportion of GNP was 58 per cent of similar expenditures for the United States and 42 per cent of the United Kingdom" (Patrick and Rosovsky, 1976, p. 44, in Glickman, 1977, p. 5). "The major share of public capital was devoted to business-oriented investments such as ports, sewers, water supply, land reclamation, and roads. ... For instance, according to the Japan Economic Planning Agency (1975) industry-related public investment was 57 per cent of total investment between 1959 and 1966; it fell to 51 per cent by 1973, in part under the impact of protest by citizens who demanded more social (or 'life-related') public spending. ... Indicators of social well-being grew at approximately 5 per cent per year during the 1960s. This was less than half of the economic growth rate (Glickman, 1977, pp. 5-7; and also see Patrick and Rosovsky, 1976, pp.28-35 and 41). "The following statement, taken from an official pubication, epitomizes Japan's growth strategy: 'It is impossible to produce 3,000 tons of pig iron in a blast furnace capable of producing only 1,000 tons, but it is possible to crowd in three times the passenger capacity in an electric train" (E.P.A., ES, 1962-63, p. 35, in Boltho, 1975, p. 67).

mainly managerial and high-skill functions and let small-scale establishments with low wages perform routine production functions, thus saving costs in production.[18/]

On the contrary, we observe in most of the present developing countries a number of unfavourable signs for the Japanese pattern of development: the illiterate mass in the labour force; low levels of know-how; a politically volatile environment where political leaders do not know when their term may end abruptly, and try to satisfy all segments of the population all at once; the import of luxurious consumption goods for the use of country's elite; low levels of savings and investment in industrial capital; institutionally set high wages for the labour force in the modern industrial sector, and consequently the enclave nature of the modern industrial sector. All too often, privileged classes of the developing countries expect to industrialize and develop in a short period of time and most importantly without undergoing sacrifices in their present consumption patterns and life styles (Gedik, 1978, pp. 80-90).

/IV.

18/ In Japan, it is said "the simultaneous presence of a modern, efficient, large-scale, high-wage sector, and of a host of small, labour-intensive, low-wage firms, both sets of enterprises coexisting not only within the same regions but also within the same industrial branches. However, the lack of direct contact between the modern corporation and the self-employed peasant or artisan, implicit in the more usual definitions of dualism, seems to be absent in Japan. On the contrary, stress has been laid upon the interactions between the two sectors in such fields as competition and sub-contracting, absorption and transmission of cyclic fluctuations or behaviour of capital and labour markets.... It can be seen that the size distribution of Japanese manufacturing establishments does not differ very markedly from that of some of the major European economies". What is strikingly different is the wage differential by the size of firms. "A comparison made for the mid-1950s showed that Japanese wage differentials by size were then as large as, or even larger than, those recorded in several underdeveloped countries" (Boltho, 1975, pp. 27-28). The relatively lower wages in the small-scale industries were possible because until recently, in Japan trade unions were limited to each individual large company and were not nation-wide organizations, and a minimum wage law has not been enacted.

IV. THE CASE OF THE REPUBLIC OF KOREA

1. The pattern of development

The Republic of Korea with a population of 37 million (1978) is a much smaller country (98,800 km^2), but possesses a number of similar characteristics to Japan. The territory is generally mountainous, poorly endowed and highly densely populated (374 persons per km^2), but the population is highly literate and industrious.

Although started much later, the Republic of Korea pursued a development path which was led by industrial-urban development much like the Japanese. From 1962 to 1976, GNP and exports grew at the average annual rate of 10.2 per cent and 29.7 per cent, respectively. From 1955 to 1975, the proportion of city population grew from 24.5 per cent to 48.4 per cent.[19/] As is well documented, the pattern of development has been typically industrial-exports led (Fei and Ranis, 1975) and agricultural-rural development came only after the development had well taken off and come closer to maturity. Although there have been serious efforts on the part of the Government, the urban-rural balance has been attained mainly as a consequence of industry-based economic development through the trickling down process. The pattern of development is very much like that of Japan but at a faster rate perhaps due to her late start.

With independence in 1945, the import-substitution phase of industrial development was begun and it is considered to have been completed by 1953-1957 (Fei and Ranis, 1975, p. 33), followed by the export-substitution phase. This latter phase contributed substantially to the solution of the unemployment and urban-rural imbalance problems. According to Fei and Ranis (1975, p. 33), the labour-surplus dualistic situation reached a major turning point in 1968-1970. Inter-provincial income disparity, which is a proxy for urban-rural imbalance, culminated toward the end of the export-substitution phase, and since that turning point, it has narrowed down rapidly as shown in table 3.

/Table 3.

19/ The city population is the sum of populations residing in *si*'s which are larger urban areas. The proportion of urban population in 1976 is estimated at 51 per cent (Song, 1977a).

Table 3. Republic of Korea: inter-provincial income disparity

	GR	ID 1	ID 2
1961	4.8		
1962	3.1		
1963	8.8	92	0.266
1964	8.6	72	0.194
1965	6.1	94	0.291
1966	12.4	110	0.337
1967	7.8	127	0.371
1968	12.6	107	0.335
1969	15.0	85	0.292
1970	7.9	84	0.291
1971	9.2	62	0.224
1972	7.0	65	0.213
1973	16.5	66	0.241
1974	8.6	57	0.218
1975			

Source: Mera, 1978a, p. 165.

Notes: GR: The real growth rate of GNP from the preceding year.
ID 1: The range of income disparity as defined by the difference between the highest and the lowest indexes of provincial per capita personal income when the national average is set at 100.
ID 2: The unweighted coefficient of variation of all provincial per capita personal incomes.

The typical feature of the urban-industrially-led development pattern of the Republic of Korea can be seen in the geographic distribution of manufacturing employment. As seen in table 4, the manufacturing employment of the country increased more than fivefold during the period 1960 to 1975. In terms of geographic distribution of the employment, the Seoul region comprising the Special City of Seoul and Kyonggi Province increased its share from 33.6 per cent to 48.3 per cent despite the efforts of the Government to disperse employment since the second half of the 1960s, as described later.

/Table 4.

Table 4. Manufacturing employment by location, 1960-1975
(1,000 persons)

	1960	1963	1969	1975
Republic of Korea	275.3 (100.0)	566.7 (100.0)	829.0 (100.0)	1,420.1 (100.0)
A. Seoul	64.1 (23.3)	180.2 (31.8)	276.8 (33.4)	433.3 (30.5)
B. Seoul's periphery (Kyonggi Do)	28.4 (10.3)	51.6 (9.1)	89.2 (10.8)	252.4 (17.8)
C. Seoul region (A + B)	92.5 (33.6)	231.8 (40.9)	366.0 (44.2)	687.7 (48.3)

Source: Mera and Song, 1978, p. 23.

It has to be mentioned here that the surplus labour was quickly reduced and eliminated during the process of economic development because the country took the strategy of promoting labour-intensive light manufacturing industries such as apparel, electronics assembly, and wig manufacturing during the early phase of industrialization. As most new industries were oriented to demand-elastic export markets, industries could be expanded very rapidly. As a result, the structure of employment changed substantially over the twelve-year period as shown below:

	1963	1974
Employment share of		
Agriculture	63.1	48.2
Manufacturing	8.0	17.4
GNP share of		
Agriculture	40.0	22.2
Manufacturing	15.1	25.3

Source: Mills and Song, 1977, pp. 64-65.

In many respects, the Republic of Korea followed, intentionally or unintentionally, the Japanese pattern of development (Song, 1977a). However, there are at least two points in which the two countries differ. One is the source of capital formation for industrial development. In the case of Japan, internal savings were the major source of investment, but in the

/Republic

Republic of Korea foreign savings provided a substantial portion of investment resources (16 per cent of GNP at its height) (Song, 1977a, pp. 5 and 8) due to its special position in the United States foreign and defence policies. The other is the rapidity of the Republic of Korea in reaching the turning point signifying the elimination of surplus labour and hence convergence of wage rates between sectors and regions. Counting from independence, it took slightly more than 20 years. If counted from the first rigorous economic development plan of the Park Administration of 1962, it took less than 10 years. This point will be further discussed later.

Other factors which contributed to successful development leading to an effective trickle down process would include:

- highly literate population
- social stability based on east Asian cultural discipline
- modern science-oriented educational system
- extensive land reform after the World War II
- population growth rate of about 1.9 per cent per year
- highly centralized decision-making
- continuous political tension with the North leading to national cohesion
- market-oriented economy.

2. Specific policies for rural development

In addition to the general pattern of economic development of the Republic of Korea which enabled it to achieve a substantial reduction in urban-rural disparities, the Government of the Republic of Korea applied a number of specific regional policies many of which were directed to narrowing urban-rural disparities. Below, some of the significant policies are examined closely.

The Government recognized the problem of urban-rural disparities around 1970. One early official document which explicitly advocated decentralization policies, was the National Land Development Plan, 1972-1981, which was made public in 1971. The decentralization policies in the plan contained two elements: (a) to curb the growth of Seoul, Busan and Taegu as they are excessively large, and (b) to encourage the growth of intermediate regional and subregional centres. Policy instruments proposed for achieving the objectives can be divided into two groups: control on the growth of large cities and promotion of development in regional and subreginnal centres and rural areas.

/Although

Although the policy tools applied since then include a ban on new industries in Seoul, the imposition of a greenbelt around Seoul to contain spatial spreading and a tax on residents in the largest cities, the regional policies which would have had nationwide impact on the distribution of population and economic activities are considered to be (a) the development of industrial estates, (b) the construction of interregional expressways, (c) the new community (Saemaul) movement, and (d) pricing policies in favour of farmers.

The policy of industrial dispersion started in 1970 with the enactment of the Local Industrial Development Act. This is a significant departure from earlier industrial promotion measures which were aimed at industrial development per se and consequently led to growth of the largest cities. During the same year, the Act for Establishment of Free Export Zones was promulgated. The Masan Free Trade Zone was established on the basis of this Act and had a significant impact on employment dispersion.

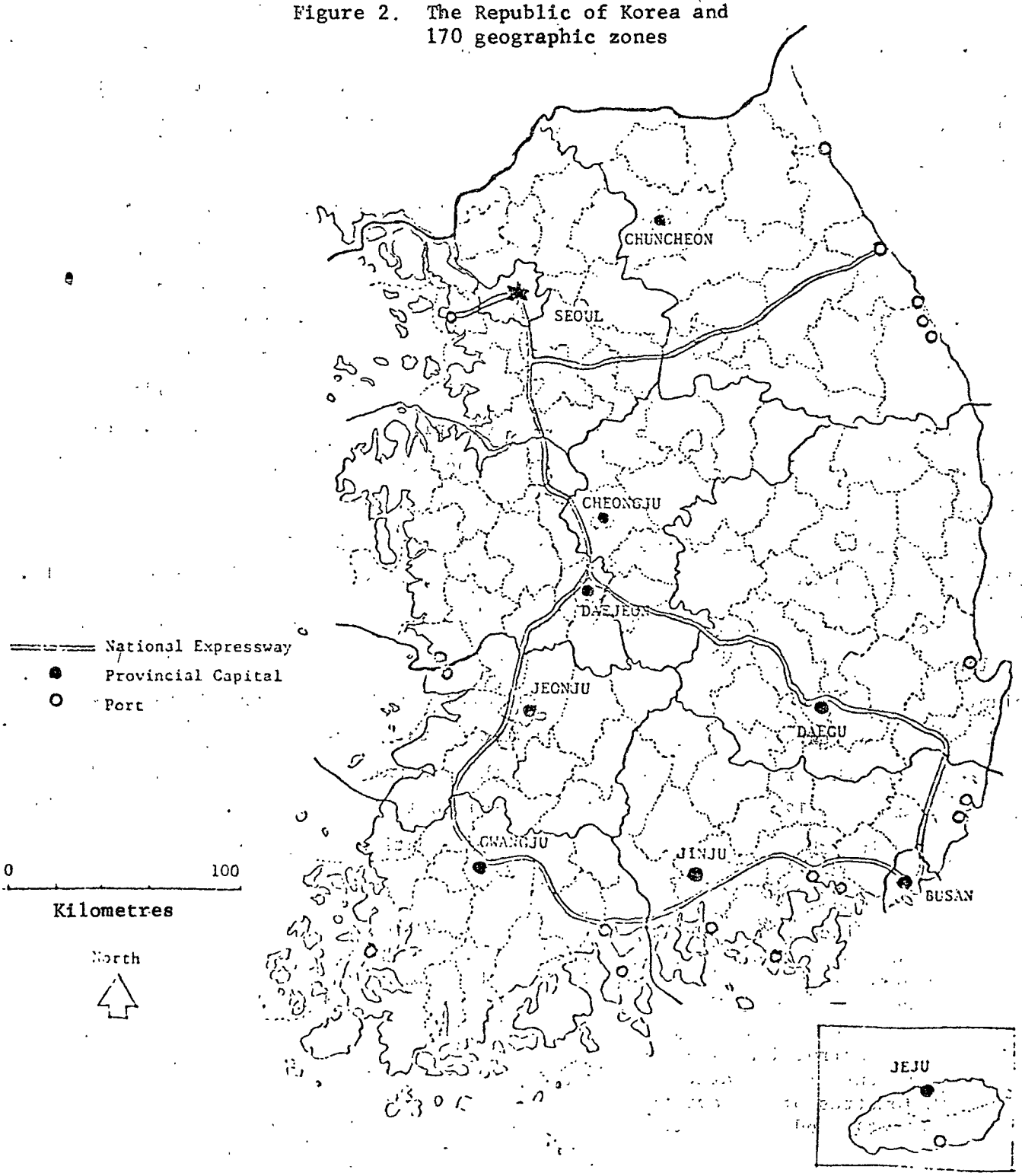
By 1975, 11 industrial estates had been designated as local industrial estates with all the incentives entitled by the Act. The total area provided by them stood at 1,007 ha and represented about 18 per cent of the total area available in various kinds of industrial estates. Due to the labour-intensive nature of the local industrial estates, they provided 25 per cent of total employment in industrial estates. Although the performance in terms of labour absorption of each local industrial estate differs in significant degrees, it is apparent that they contributed to some degree to the dispersion of population and employment.

In addition, a clear policy decision was made to construct a series of coastal industrial estates in the south and southeast coastal areas mainly for heavy industries. They must have had a sizable impact on the distribution of population and employment. An analysis contained in the annex is aimed at estimating the impact of developing decentralized industrial estates quantitatively.

The construction of interregional express highways started in 1969 with the Seoul-Inchon Expressway, and by the middle of 1970, Seoul was connected with Busan, the second largest city at the other end of the country, by another expressway. Although these expressways were constructed mainly for meeting the expected traffic demands, newer expressways were planned with an explicit purpose of having backward regions closer to more developed regions. By 1975,

/Figure 2.

Figure 2. The Republic of Korea and 170 geographic zones



/Kwangju

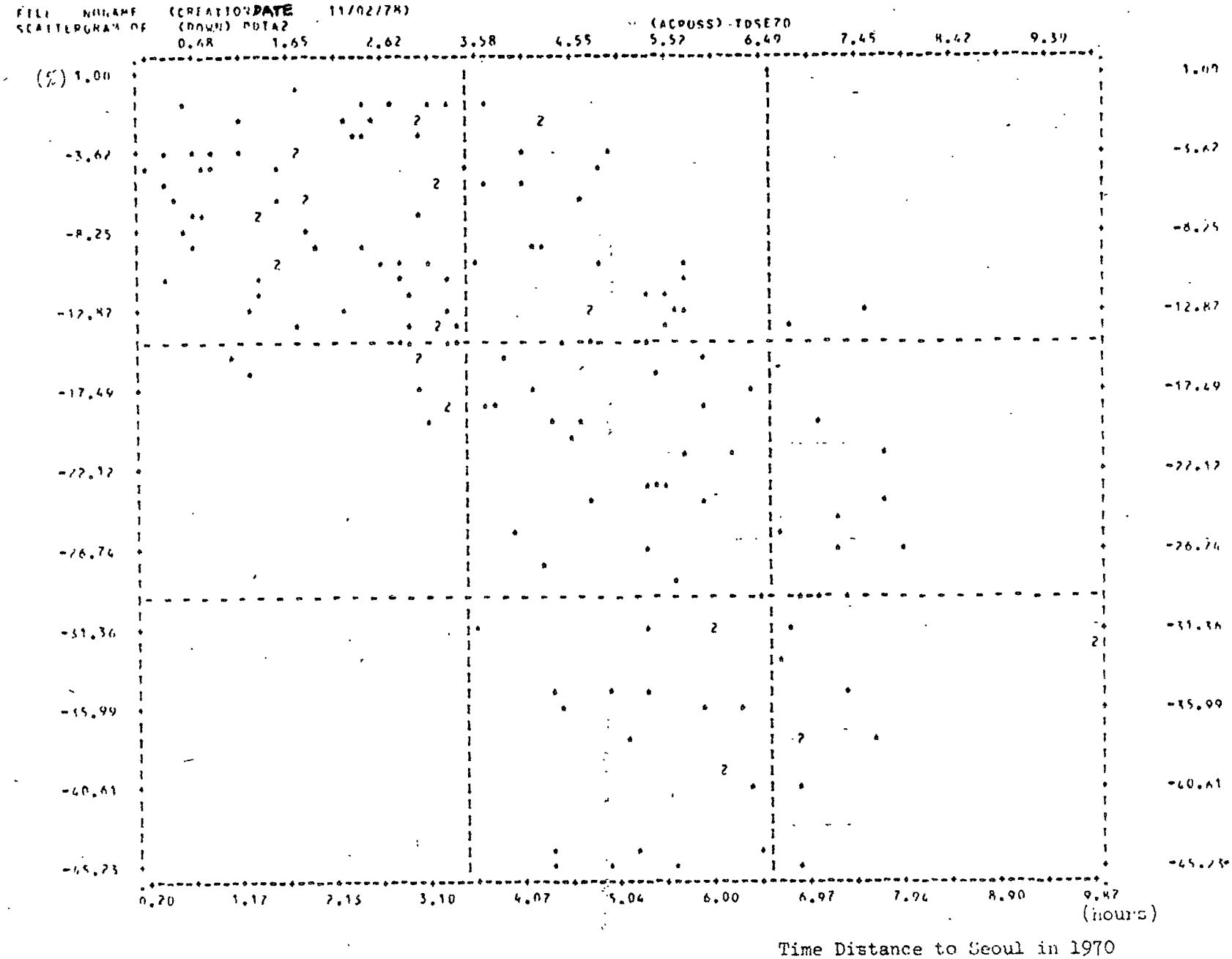
Kwangju in the southwest region and Gangreung in the northeast region were connected with major cities by expressways. With these expressways, time distance to Seoul or Busan was reduced substantially from many parts of the country, as shown in figures 3 and 4. As presented in the annex, time distance was reduced on the average by 15 per cent from 1970 to 1975 from the 170 analysis zones to Seoul and Busan. As figure 3 indicates, those areas far from Seoul have gained generally a greater percentage reduction in time distance. It is quite conceivable that such a significant improvement in accessibility to major centres has helped to accelerate the development of the areas affected.

Another significant policy measure which requires specific attention is the New Community Movement or the Saemaul Movement. This movement started with the President's address to provincial governors and mayors in April 1970. It is a totally indigenous movement to bring about in rural villages a fundamental change in the expectations, motivations, in the whole tenor of life and even in the environment of daily existence itself, based on the philosophy of "diligence, self-help, and co-operation", i.e., the Saemaul spirit (Song, 1978, p. 9). The movement emphasizes spiritual innovation and considers the Saemaul spirit as the nation's most important resource for development. It is a mechanism for development that requires and also makes possible the participation of all the villagers and households in the process of national development (Song, 1978, p. 11).

Action programmes are first developed at the village level by the village development committee. In principle, development resources are contributed voluntarily by village members and the Government resources are allocated to those development efforts which are worthy of public assistance. During the course of five years, the gross investment made in the context of the Saemaul Movement increased from Won 12.2 billion ($38.6 million) in 1971 to Won 295.9 billion in 1975. During the period, the government contribution in investment averaged at about 40 per cent of the total inputs.

> "Since the beginning of the Saemaul Undong in 1971, more than 590 million man-years of villagers' labour has been contributed to the Movement and 8 million Saemaul projects have been completed, averaging 215 projects per village.
>
> "The Saemaul projects included as of the end of 1977 the construction of 43,060 kilometres of farm roads (88 per cent of the target), the building or widening of 42,220 kilometres of intravillage roads (over 100 per cent of the target), and the construction of 63,927 bridges of small and

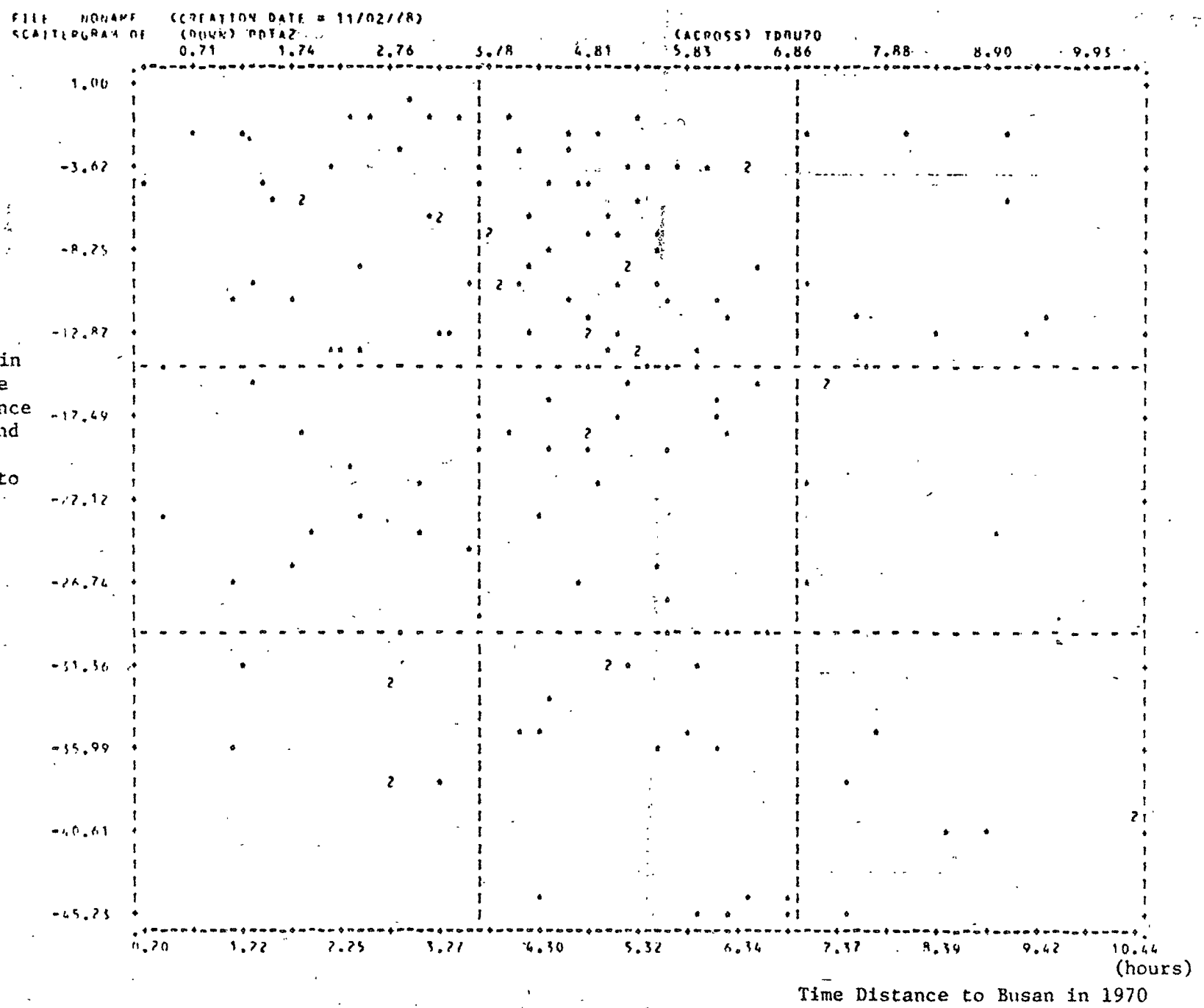
/Figure 3.



Percentage Reduction in the Average Time Distance to Seoul and Busan from 1970 to 1975

Figure 3. Reduction in average time distance as related to time distance to Seoul

/Figure 4.



Percentage Reduction in the Average Time Distance to Seoul and Busan from 1970 to 1975

Figure 4. Reduction in average time distance as related to time distance to Busan

/medium

medium size (83 per cent of the target). As a consequence large trucks and farm machinery can now easily reach all villages and farm settlements.

"Farm villages are now linked to other villages, local roads, national highways, expressways and large metropolitan areas. Consequently, the transportation of both agricultural inputs and outputs has become much more efficient. Almost all the thatched roofing in the countryside has been removed and replaced by tile. Nearly all the villages have been modernized with piped water, electricity, and telephones.

"Many old villages in Korea have been transformed through the Saemaul Undong into new villages, with better houses, new roads, more farm equipment, community halls and many other facilities. Some of these amenities existed before the Movement, but have been renewed so much that they surprise even old visitors. Some of these, including piped water, village telephones, power tillers, and community facilities never existed before and have been achieved through the Saemaul Undong... Many rural villages can now enjoy cultural facilities similar to those in urban areas, and agriculture in Korea, thanks to modern irrigation methods, no longer suffers heavily from flood and drought" (Song, 1978, pp. 12-13).

Currently, the Saemaul Movement comprises six programmes listed below. They are listed in the order of the size of the budget in 1975:

(a) Income augmentation programme,
(b) Wage income programme,
(c) Productive infrastructure development programme,
(d) Welfare and environmental programme,
(e) Urban Saemaul Movement programme, and
(f) Spiritual enlightenment programme.

The wage income programme predominated in early years, representing the income redistribution-oriented nature of the movement at that time. By 1975, it had been re-oriented toward the expansion of production. The expansion of the income augmentation programme represents this orientation.

Although the Saemaul Movement includes an urban programme, it is a heavily rural-oriented movement. As shown in figure 5, per capita government contribution to the Saemaul Movement is noticeably greater in predominantly agricultural areas. However, as shown in figure 6, when per capita government contribution is measured against agricultural population, per capita contribution ceases to be related to the percentage of agricultural population. Therefore, it can be said that the intensity of Saemaul activities among agricultural population is randomly distributed with respect to the degree of urbanization.

/Figure 5.

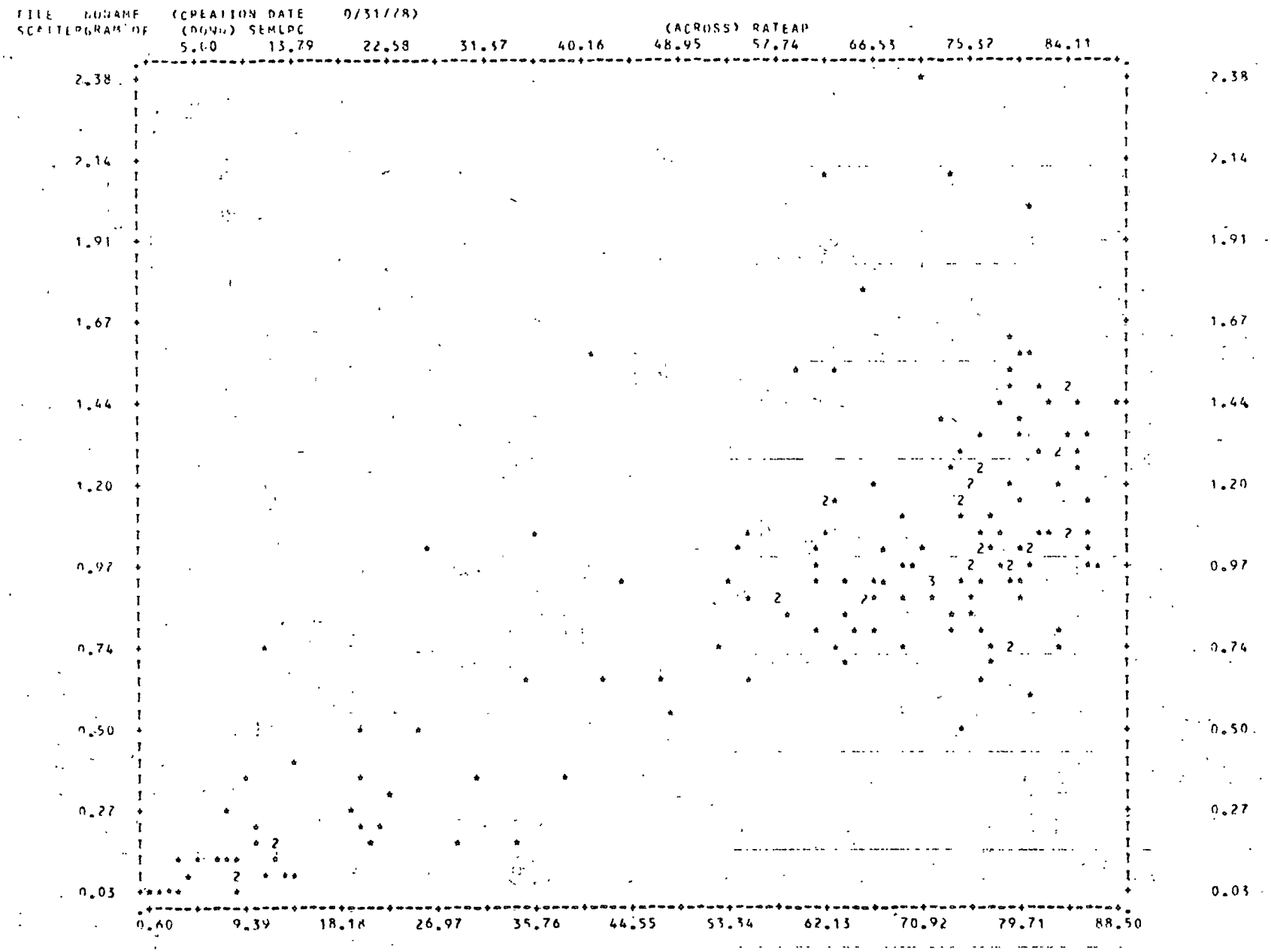


Figure 5. Per capita government contribution to Saemaul as related to the proportion of non-agri. population

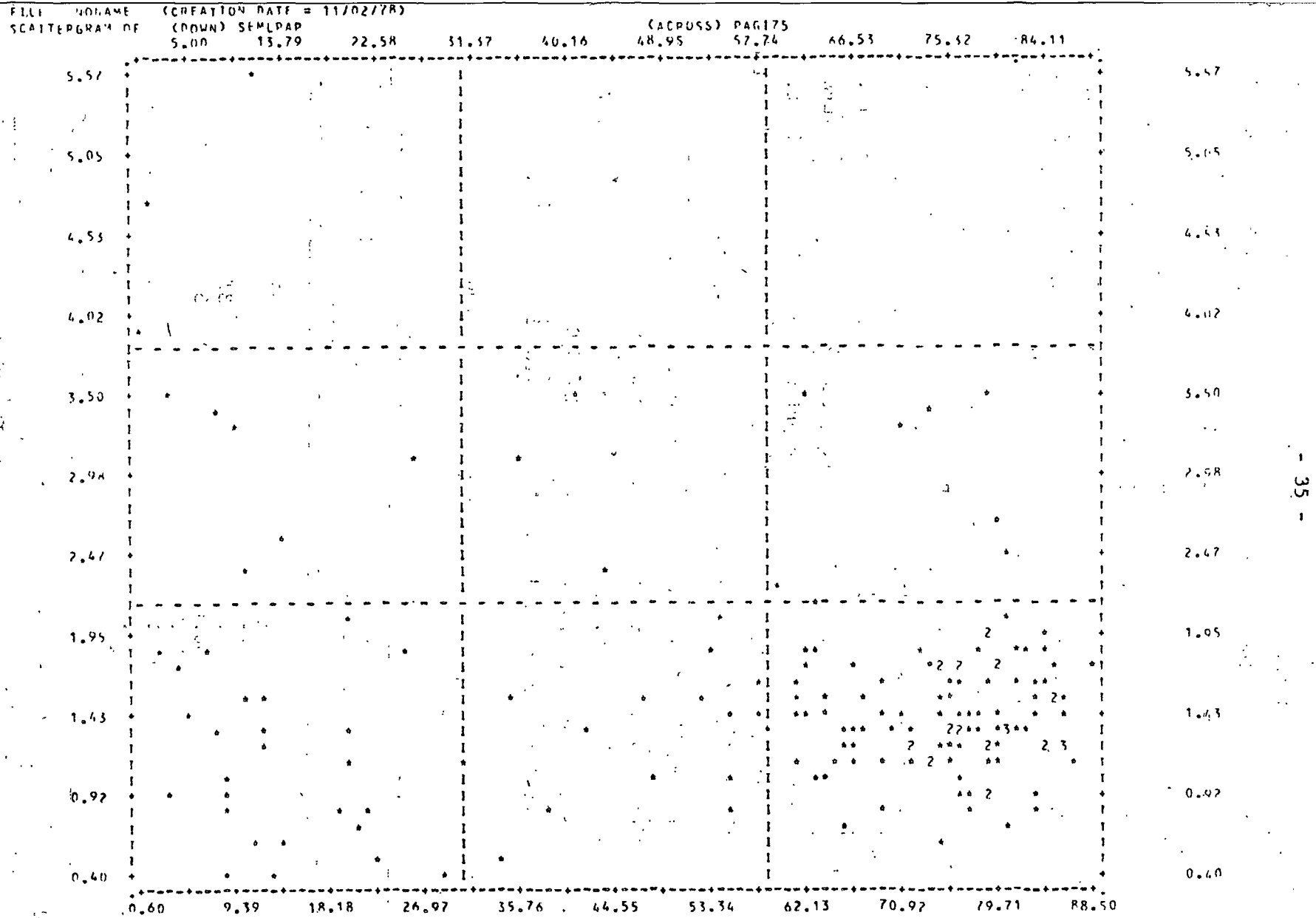


Figure 6. Saemaul government contribution per agricultural population as related to the proportion of N.A.B.

/Saemaul

Saemaul Undong must have had a sizable impact not only on the spiritual attitude of the rural population but also on the economic development of the rural area. This is examined in the next section.

Although the above three policy measures should have spatially selective development impact on rural development, i.e., only in those areas within or in the vicinity of the areas directly affected by them, there has been one important policy measure for raising the income level of the rural population which had an impact spatially not selective. This is the pricing policy in favour of farmers.

"In the 1950s and the early 1960s, Korea received large imports of P.L. 480 grain from the United States. During this period the government did not pay much attention to agriculture. Prices paid to farmers were deliberately kept low as part of the over-all effort of maintaining general price stability. After the bad harvests of the late 1960s, however, the government began to turn its attention to agriculture and to place a high priority on rural development. The government reversed the policy of keeping prices paid to farmers low and raised the prices of agricultural products in 1969" (Song, 1977a, p. 28).

Since 1968, the terms of trade for farmers improved by 22 per cent by 1973 and the relative position of farmers' income to urban residents improved consistently as shown in table 5. These figures indicate that the improvement in farmers' terms of trade contributed by about 40 per cent to the rise of the farmers' per worker income relative to urban workers from 1968 to 1973.

Table 5. Republic of Korea: farmers terms of trade and income level

	Terms of trade index for farmers	Ratio of per worker income of farmers to urban workers a/ (percentage)
1968	94.3	27
1969	97.7	29
1970	100.0	31
1971	106.1	36
1972	113.3	37
1973	114.7	41
1974	112.0	46
1975	111.6	

Source: Mera and Song, 1978, pp. 32-33.

Note: a/ Because of a high participation rate, the ratio of per capita income was consistently much higher than the figures shown above and reached 96 per cent in 1974. Due to a larger family size, the average farm household income exceeded the average urban household income in 1974.

/3.

3. A quantitative analysis of the rural development policies

(a) General

The entire territory has been divided into 170 geographic zones as shown in figure 2 and the changes in major social indicators from 1970 to 1975 have been examined as related to the rural development policies concerned. Due to the lack of reliable data on *per capita* income, the growth rate of population is considered as the first proxy for comparing welfare levels of zones because differentials in the population growth rate are largely determined by differentials in the rates of migration and people migrate in search of better opportunities. Details of the analysis are presented in the annex.

The results of regression analysis for the growth of population from 1970 to 1975, PPOPG2, are shown in table 6. A number of state variables at the initial year of 1970 are known to affect the future growth of population. The sheer size of population, TPOP70, had an apparently negative impact, while the share of the non-agricultural population PNAP70, had a definitely positive impact. In addition, a higher human capital content had a positive impact: both the proportion of college graduates in adult population, RATG70, and the proportion of school enrolment in the secondary-school age population, RATM70, had a positive impact. The accessibility to Seoul or Busan, the two largest cities in the country, had also a positive impact, with the accessibility to Busan being more influential than the other. This is evidently a reflection of the policy of the Government to shift industries and population to the south. Another notable finding is the share of medical doctors in the population, DPTH70. Although the result should be interpreted with care, it had a definitely positive impact.

As far as the Government's policies are concerned, the following conclusions can be made. The *Saemaul* Movement as measured by *per capita* government contribution from 1973 to 1975 is significantly positively associated with the growth rate of population. Therefore, it could be interpreted that the *Saemaul* Movement had a positive impact on the welfare level of the area in which the movement took place. If this interpretation is made, the results of the analysis indicate that $1 contribution *per capita* led to an increase of population from the level expected without any by 15 per cent during the five-year period, through either a reduction in emigration or an increase in immigration. Thus, it is quite plausible that the *Saemaul* Movement had an impact on the rural areas for reducing emigration or even encouraging return migration from other areas.

/Table 6.

Table 6. Estimated equations for PPOPG2

No.	CONST	TPOP70	PNAP70	RATG70	RATM70	VTDS70	VTDB70	SEMLP2	INVTP2	DPTH70	PDOCG2	PDTDA2	R^2
1.	-45.81		0.7609					15.07					0.4671
	(9.44)		(11.18)					(9.12)					
2.	-43.06			10.27				14.81					0.4248
	(8.86)			(10.17)				(9.12)					
3.	-50.31	-1.613		12.31				15.31					0.4667
	(9.66)	(3.61)		(10.92)				(9.72)					
4.	-60.77		0.6213		0.4536			15.34					0.4838
	(7.55)		(6.88)		(2.31)			(9.98)					
5.	-50.33		0.5191	4.247				15.82					0.4878
	(9.91)		(4.52)	(2.59)				(10.18)					
6.	-47.15			10.06				14.91	12.52				0.4334
	(8.92)			(9.92)				(9.22)	(1.58)				
7.	-51.57	-0.9434	0.4142	6.657				15.90					0.4995
	(10.16)	(1.97)	(3.29)	(3.27)				(10.32)					
8.	-50.25	-1.550		12.07				15.34	9.55				0.4716
	(9.66)	(3.45)		(10.56)				(9.77)	(1.24)				
9.	-47.60	-2.276		6.217				14.29		104.0			0.4980
	(8.50)	(4.50)		(2.62)				(8.58)		(3.04)			
10.	-44.65	-1.074		9.610				12.85			0.2089		0.5554
	(8.44)	(2.41)		(7.80)				(8.04)			(5.44)		
11.	-18.61	-1.671				4.836		3.15		102.2	0.2087		0.4328
	(3.11)	(3.47)				(1.51)		(1.51)		(5.63)	(6.19)		
12.	-50.71		0.5146	2.888				15.86	12.12	20.01			0.4980
	(8.85)		(4.16)	(1.11)				(9.31)	(1.54)	(0.63)			
13.	-45.60		0.3879	3.732				13.52	9.474		0.1975		0.5757
	(8.82)		(3.36)	(2.35)				(8.51)	(1.31)		(5.23)		
14.	-41.77		0.3322					12.37	9.773	61.14	0.2174		0.5881
	(8.82)		(3.01)					(8.00)	(1.37)	(3.18)	(5.80)		
15.	-23.59		0.4558			5.354	9.563	5.01	11.86				0.3309
	(3.48)		(5.76)			(1.92)	(2.91)	(2.12)	(1.73)				
16.	-14.96	-0.7292	0.3561	3.755				5.95				-0.02224	0.3377
	(1.92)	(1.64)	(2.76)	(1.87)				(2.50)				(2.81)	

/The

The private investment in an industrial estate had a positive impact. Although t-value is not large (but significant at about 10 per cent level), the estimated coefficient consistently indicates that $1 investment per capita increases population growth by 10 per cent for a five-year period.

As to accessibility to Seoul or Busan, it is known from equations 11 and 15 that better accessibility is associated with a higher growth rate of population. These equations imply that those zones closer to either of the cities grew at a greater rate. However, equation 16 indicates that a greater rate of reduction in the average time-distance to these two cities, PDTDA2, leads to a greater rate of population growth. Therefore, an improvement in accessibility to either or both of these cities would help to increase population of the area. This is again to be interpreted as it would reduce out-migration or would increase inmigration due to welfare improvement.

A comparison of equation 16 with equations 11 and 15 indicates, however, that a recent reduction in time distance by the introduction of expressways did not attain the level of influence on population growth which an equal level of accessibility already existing in 1970 did. Let us take a typical zone which was 4 hours away from Seoul in 1970 and by 1975 became closer to Seoul and Busan on the average by 15 per cent, say, 3.4 hours away from Seoul. Due to the reduction in the average time distance, this zone would gain in population growth by 0.003 per cent (0.02224 x 0.15) according to equation 16. On the other hand, if the zone was located 3.4 hours away from Seoul in 1970 instead of 4 hours, the population growth rate would have been greater by 0.213 per cent, according to equation 11. A part of this discrepancy may be intrinsic in the sense that development potentially is determined by the relative position of the zone rather than its absolute position, but another part of it must be due to the fact that those expressways were introduced only toward the end of the five-year period and their full potential had not been fully realized by 1975. Nonetheless, by comparing the effect of the accessibility improvement with those of the Saemaul Movement and industrial estates development, it can be said that the effect of the first was substantially smaller than the last two factors.

To summarize the results contained in table 3, it can be said that during the period of 1970 to 1975, the population growth rate was generally higher in areas which were highly urbanized, close to Seoul or Busan, having

/relatively

relatively rich human capital and having favourable amenity indicators such as a high proportion of medical doctors in population. Nevertheless, the effects of the rural development policies were unambiguously identifiable. Although the effect of accessibility improvement was not substantial, those of the Saemaul Movement and industrial estates development were roughly comparable and significant. In the case of the Saemaul Movement, $1 contribution from the Government per capita which roughly corresponded to $2.50 in total Saemaul expenditure per capita led to 15 per cent increase in population over the five-year period. In the case of industrial estates development, $1 private investment, which corresponded to about $1.10 in total investment,[20/] led to 10 per cent increase in population. From these, it can be said that $1 investment per capita led to 6 per cent increase in population growth in the case of Saemaul and 9 per cent in the case of industrial estates development.

The growth rate of population has been used as a proxy for welfare of the area because people tend to move from a place of low welfare to one of high welfare. However, it alone would not indicate the relative level of welfare. Another important indicator would be the degree of industrialization. This is particularly important in this country as it is a country the development of which has been led by the industrial sector rather than the agricultural sector.

Table 7 shows the results of regression analysis for the difference in the percentage of non-agricultural population from 1970 to 1975. The share of non-agricultural population is here taken as a proxy for industrialization. A large constant term estimated for all equations implies that industrialization went on nationwide. However, already highly industrialized zones had difficulty in increasing the share of non-agricultural population (a consistently highly significant negative coefficient for PNAP70). It is seen from the coefficient for PDOCG2 that industrialization went on in parallel with the growth of the number of medical doctors.

As to policy variables, we observe the following results. First, Saemaul expenditure had a definitely negative impact on the increase in the share of non-agricultural population. Secondly, the investment in industrial estates did not have much impact on industrialization. However, the accessibility to Seoul or Busan had an expected impact. Although the link is less clear in the case of Busan, better accessibility to one of them had a

/Table 7.

20/ This proposition is derived from Mera and Song (1978).

Table 7. Estimated equations for DPNAP2

No.	CONST	TPOP70	PNAP70	RATG70	RATM70	PDCCG2	SEMLP2	INVTP2	DPTH70	VTDS70	VTDB70	PDTDA2	R^2
1.	14.678		-0.1094				-1.213						0.1800
	(11.39)		(6.05)				(2.94)						
2.	11.967		-0.1347		0.08219		-1.166						0.1919
	(5.55)		(5.57)		(1.56)		(2.83)						
3.	14.752	0.1666		-1.7804		0.03458							0.1707
	(9.86)	(1.33)		(5.11)		(3.19)							
4.	15.589		-0.1360	-0.08068		0.04164	-1.699	-0.1735					0.2547
	(10.99)		(4.30)	(0.18)		(4.02)	(3.90)	(0.09)					
5.	16.357		-0.1377			0.03943	-1.555	-0.5211				-0.00279	0.2510
	(7.45)		(5.60)			(3.71)	(2.19)	(0.26)				(1.20)	
6.	15.496		-0.1407			0.04148	-1.681						0.2545
	(11.67)		(7.03)			(4.05)	(3.96)						
7.	10.288		-0.1175			0.04033				2.034	0.8547		0.2500
	(13.21)		(6.57)			(3.86)				(2.51)	(0.89)		
8.	16.290		-0.1382			0.03934	-1.545					-0.0002679	0.2506
	(7.50)		(5.66)			(3.71)	(2.19)					(1.18)	
9.	13.9277		-0.1258				-1.257			1.709	1.15677		0.1877
	(6.52)		(5.84)				(1.72)			(2.03)	(1.16)		
10.	16.2389		-0.1099				-1.227					-0.004076	0.1774
	(7.16)		(4.54)				(1.68)					(1.74)	

/favourable

favourable impact on increasing the share of non-agricultural population. In addition, as seen from equations 6 and 10, a reduction in its accessibility had a favourable effect for increasing the share of non-agricultural population (significant at 10 per cent level).

To summarize, urbanization or industrialization proceeded nationwide mainly due to general development of the national economy. In particular, less urbanized areas had a big lift toward urbanization. In this context, the Saemaul Movement had an effect of preserving agricultural characteristics of the area rather than of transforming the area into an urbanized economy.

Another welfare indicator examined was the increase in the school enrolment ratio of the secondary school-age population from 1970 to 1975, DRATM2. The results of regression analysis are contained in table 8. As expected, there was an over-all increase in all parts of the country (the intercept being about 24 percentage points). The zones having a greater population had definitely a greater increment. But, those with a high proportion of non-agricultural population had difficulty in increasing it. This is probably because those areas already had a high rate of school enrolment beyond which it was difficult to increase.

Neither Saemaul expenditure nor investment in an industrial estate turned out to be significant. The accessibility to Seoul, but not to Busan, turned out to have a definitely negative impact. This would be a reflection of the fact that those zones close to Seoul had already a high rate of enrolment in 1970. What we see from these results is a general spread of secondary education to hitherto less developed areas and no specific policy among those examined here had any tangible impact on it.

(b) The analysis of industrial estates

The results of regression analysis for those variables representing the development of industrial estates are contained in table 9.

As far as the performance of industrial estate development is measured either by its value of export or the size of employment, the accessibility to Seoul or Busan is known to be a decisive factor. If it is measured by the accessibility to Seoul or Busan, whichever is better, TD75 or VTD75, or by the accessibility to each of them, VTDS75 and VTDB75, the accessibility variable turned out to be quite significant. The other factors which had significant effect were the availability of telephones, TPTH75, in the case of exports, and the size of population, TPOP75, in the case of employment. The coastal location, DUMMY, is known to have some advantage.

/Table 8.

Table 8. Estimated equations for DRATM2

No.	CONST	TPOP70	PNAP70	RATG70	RATM70	TPTH70	VTDS70	VTDB70	SEMLP2	INVTP2	PTELG2	PDOCG2	R^2
1.	24.63 (16.54)		-0.1424 (7.64)		-0.03504 (0.80)							-0.005642 (0.75)	0.5631
2.	23.95 (21.59)		-0.1812 (6.76)			0.08767 (0.86)			-0.1878 (0.58)				0.5629
3.	24.02 (35.67)	0.4603 (4.50)		-2.147 (9.91)			-2.381 (3.19)				0.6216×10^{-4} (0.28)		0.5246
4.	24.57 (16.32)		-0.1423 (7.61)		-0.03309 (0.75)					-0.5304 (0.36)		-0.005545 (0.74)	0.5635
5.	23.95 (21.55)		-0.1832 (6.79)			0.1019 (0.98)			-0.1927 (0.59)	-1.0651 (0.71)			0.5647
6.	24.01 (35.53)	0.4567 (4.45)		-2.121 (9.51)			-2.421 (3.22)			-0.8065 (0.52)	0.6220×10^{-4} (0.28)		0.5257

/Table 9.

Table 9. Estimated equations for industrial estates indicators

Dep. Var.	No.	CONST.	TD75	PPOPG2	DUMMY	DPTH75	VTD75	TPTH75	VTDS75	VTDB75	TPOP75	R^2
EXPORT	1.	146997.	-48456.2									0.3237
		(3.87)	(2.59)									
	2.	90465.9	-46778.2			114519.						0.4131
		(1.66)	(2.58)			(1.41)						
	3.	44189.5	-49468.7					2820.32				0.4690
		(0.68)	(2.87)					(1.89)				
	4.	-65401.7							69292.8	178057.		0.8173
		(2.56)							(7.61)	(3.39)		
	5.	56101.7			47010.1	159042.	-49126.3					0.4655
		(0.90)			(1.09)	(1.75)	(2.71)					
EMPLOY	1.		-8.04381		10.7762	43.6406						0.5683
			(3.21)		(1.84)	(5.07)						
	2.				3.36		5.23426				0.557931	0.8661
					(1.04)		(2.00)				(2.57)	
	3.	-11.8298							13.0174	28.949		0.8676
		(-3.00)							(9.23)	(3.56)		
	4.	-8.53604							8.62188	23.4777	0.454982	0.8975
		(-2.12)							(3.22)	(2.94)	(1.87)	
IEINVT	1.	65104.1	-23731.1		101458.							0.4499
		(2.01)	(1.53)		(3.06)							
	2.	123463.	--22801.8		95667.9			-1559.12				0.5060
		(2.08)	(1.48)		(2.89)			(1.17)				
	3.	82796.1	-21618.6	-486.6	77607.1							0.3887
		(1.80)	(1.21)	(1.17)	(2.20)							
	4.	147654.	-25090.8	-610.9	69056.4	-108178.						0.4847
		(2.33)	(1.45)	(1.49)	(2.01)	(1.43)						

/As

As regards the amount of private investment in industrial estates, the coastal location made a significant difference. The accessibility to Seoul or Busan had some effect but to a lesser degree than in the case of exports or employment.

On the whole, the equations for IEINVT indicate the nature of industrial investment. For heavy industrial investment, coastal location is important, but accessibility to a large city, the presence of medical doctors or popular use of the telephone is not important. It can be operated in an enclave. On the other hand, employment-oriented industrial estates need to be located in the vicinity of population agglomerations. Accessibility is a decisive factor for its success.

(c) Conclusion from the analysis

Although the present analysis is restricted to an examination of changes from 1970 to 1975, the analysis of this most recent five-year period has revealed the following.

The entire territory of the Republic of Korea is undergoing a rapid rate of development. This general force of development is predominant probably in all aspects of development. As far as the development is seen from secondary school enrolment, it is spreading from already developed Seoul and Busan areas to farther and less developed areas. For this general development, the Saemaul Movement or the industrial estate development did not have any tangible impact.

Industrial or, to be more accurate, the share of non-agricultural population is also increasing across the board. Within this context, the Saemaul Movement had an effect of promoting agricultural development, thereby retarding the rate of increase in the share of non-agricultural population. However, industrialization is proceeding from areas closer to Seoul in particular or Busan to areas farther out. For this process of spreading out, improvement in accessibility to either city has an accelerating effect.

Population growth is affected by a number of policy variables including the Saemaul Movement, industrial estates development and accessibility improvement. As this indicator is considered to be the most general indicator of relative level of welfare, except perhaps income levels for which data is not available for this level of disaggregated areas, it can be said that all of the above three policy measures had an effect which had been aimed at. Particularly, either of the Saemaul Movement and industrial estates development proved to have a substantial effect on reducing

/outmigration

outmigration or increasing inmigration. Their effects per unit of investment are comparable. Accessibility improvement had an impact of spreading the wave of population growth from the two largest metropolitan areas, but their effect was substantially smaller.

These spatially selective policy measures certainly helped to reduce outmigration from rural areas, but many welfare indicators went up throughout the country due mainly to spatially non-selective policy measures as well as general development of the country. This conclusion implies fluidity of population and activities over space and suggests certain limitations to spatially selective measures. However, it also implies that an appropriate combination of spatially selective and non-selective measures should be devised so that a multitude of national development objectives may best be achieved.

V. AN OVERVIEW AND CONCLUSIONS

1. Lessons from the Chinese experience

In this context, the experience of China may have to be referred to as it is often thought to be a spectacular success story in combining equality and growth from a low level. In a sense, it has been indeed a great success.

In 1949 the country had a severe and persistent urban unemployment problem. "Chinese reports of this period regularly mention unemployment figures running into the millions. Over the twelve-year period ending in 1960, ... the average of yearly unemployment rates for non-agricultural male workers was at least 12 per cent and perhaps much higher. In the country side, excess labour supply led to widespread seasonal idleness both before and after 1949" (Rawski, 1978, pp. 1-3). Per capita GDP in 1952 is reported to have been about $US70 (in mid-1970's constant prices), with agriculture dominant in the economy (see table 10).

Such conditions have been transformed into very different ones within a quarter of a century through an average annual economic growth rate of 6.2 per cent and a consistently increasing gross investment recently exceeding 25 per cent of GDP. Major policies applied were "accelerating the rate of industrial growth, transferring the urbanites to rural units, and strictly limiting peasant migration to the cities" as well as "collectivization and technical development of agriculture" for enlarging rural employment opportunities (Rawski, 1978, p. 3). Although the hastly application of these policies during the period of the Great Leap Forward

/Table 10.

Table 10. Selected indicators of Chinese economic development, 1952-1974

	1952	1957	1962	1965	1974	Average annual growth rate 1952-1974 (percentage)
GDP (billion 1957 yuan)	70.41	104.68	108.29	150.64	226.24	6.2
Share in GDP (percentage)						
Agriculture	45.7	42.7	32.6	32.6	25.2	
Industry and transport	27.4	32.6	42.2	42.9	52.1	
Population at July 1 (million)	571	641	704	746	916	2.2
GDP per capita (yuan)	130.15	163.30	153.82	201.93	290.66	3.7
Gross fixed capital formation as percentage of GDP	10.9	18.6	19.3	23.5	25.5	
Urban retail price index	100.0	109.1	118.4	n.a.	115.6	0.8

Source: Rawski, 1978, p. 2.

/(1958-1960)

(1958-1960) turned out premature, these policies started to materialize. "Beginning in the late 1960s and continuing into the 1970s, we find considerable evidence of high employment levels and sharply reduced involuntary idleness in both urban and rural areas (Rawski, 1978, p. 4).

Not only did China sharply reduce unemployment, it also succeeded in reducing inequality in income distribution. It is reported that the degree of income inequality in China is remarkably low in comparison to its own past and to contemporary developing countries in Asia. As to the rural sector of China it is estimated that "in the period before the Revolution the bottom 20 per cent of the rural Chinese population received between 5 and 6 per cent of income while the top 20 per cent received close to 45 per cent," but now, "considering only distributed collective income and income from private plots the share of the bottom quintile is probably no less than 10 per cent while that of the top quintile is about 36.3 per cent" (Khan, 1977, p. 274). Even the present degree of inequality may be considered excessive for some, but is certainly better than most Asian developing countries.

Although many observers may look into the adoption of labour-intensive industrial development in all parts of the country as a key factor for bringing about this success story, the truth appears to lie elsewhere. Although the continuous, rapid expansion of industry at the rate of around 10 per cent for nearly three decades has been the major contributor to China's economic growth, employment creation in industry has not been substantial. "New industrial employment accounts for only 12-17 per cent of incremental employment ... using a narrow or broad definition of industry" while "industry's share in incremental product ... amounts to approximately 59 per cent for 1957-1971" (Rawski, 1978, p. 21). For some conscious reasons including the need to supply most of its own intermediate and capital goods domestically and, perhaps, for administrative and historical reasons, "large plants in China today typically display a degree of capital intensity which does not reflect aggregate factor proportions; a considerable, and indeed growing degree of mechanization; and high and labour productivity (Rawski, 1978, pp. 31-33). Indeed, there are small-scale industries spread throughout the country, but "despite the expansion of rural industry, large-scale industry has retained its position as the leading force in Chinese industrial expansion," and "direct employment impact of collective and small-scale industry is extremely small" amounting at most 15 million full-time workers (Rawski, 1978, pp. 38-42). The role of small-scale manufacturing

/in

in rural areas should be looked at, instead, in relation with its complementary relationship with agricultural development, as explained below.

It was the agricultural sector that abosrbed a bulk of surplus labour in the country. It is estimated that "China's agricultural economy has succeeded in absorbing an estimated total of 78.8 million workers, an increase of 30-34 per cent over the 1957 agricultural labour force of 231.5 to 260.3 million ... while simultaneously raising the average number of days worked considerable above the levels achieved prior to 1960 (Rawski, 1978, p. 91). The factors which contributed to the expansion of labour demand in agriculture were (a) the combination of growing managerial experience and sound economic policy at all levels of government and (b) the presence of rapidly increasing and, by the 1970s, large supplies of industrial inputs including power, machinery, building materials, steel, petroleum products and chemical fertilizer (Rawski, 1978, p. 57). In terms of the use of fertilizers, China came into a class with some of the world's highest users of fertilizers including Japan and in terms of mechanization of farming, Chinese farmers by the mid-1970s became equipped with mechanical power roughly equivalent to the level available to Japanese farmers in 1955 or later" (Rawski, 1978, p. 59). Indeed, mechanization of agriculture "has proved to be complementary rather than competitive with agricultural labour" (Rawski, 1978, p. 66). In this context, "rural industry can provide the tools and construction materials needed for water control and land development projects, which in turn stimulate local demand for pumps, fertilizer, threshers, electricity and other industrial goods".

To summarize, "during the past two decades, collectivization and industrialization have modified the framework of China's rural economy in directions which have permitted rural labour as well as land to be utilized with increasing intensity. Intensification of cropping practices and of the cropping cycle, increasing adoption of labour-using plant and animal products and massive farmland construction campaigns have contributed to agricultural development by simultaneously raising output and absorbing rural labour".

It is to be noted that China apparently took a dual strategy; the development of capital-intensive industry on one hand and on the other the intensification and modernization of agriculture. For eliminating unemployment and underemployment, the latter contributed significantly, while the former contributed mainly to expand the size of the economy.

/Impressive

Impressive as it is, this experience of China was possible under the following conditions:

- ideologically motivated strong political leadership,
- nearly unlimited power of the Government,
- consensus on national goals and priorities,
- large country in terms of land areas, resources, and population reaching nearly 1 billion persons.

It should be mentioned that replication of the Chinese experience elsewhere may not succeed if any of the above and other conditions is not met.

2. An overview

Balance or equality between urban and rural areas should be considered as only one of the desired goals. Interpersonal equality, national aggregate growth, as well as equality between urban and rural areas should all be taken into account simultaneously. For example, it is possible to have equality between urban and rural areas, but also to have at the same time large interpersonal inequality, and/or to have low levels of socio-economic development, both in urban and rural areas. Furthermore, inequality between urban and rural areas should be considered in a dynamic sense since the disparity can change rapidly over time. Therefore the guidelines proposed for narrowing urban-rural inequalities should not be considered in isolation and in a static way, but in light of other goals and in a dynamic sense.

Interaction between the goals, such as between the goals of national aggregate economic development and of rural and urban equality, and the path of disparity between urban and rural areas over time will be different according to, among others, the state of socio-economic development of the country, and its resource base. For example, a country like Japan since the Second World War - with a highly educated labour force, sophisticated levels of know-how, political stability and consensus on development goals and strategies, high levels of savings and investment, prevention of imported consumption goods, etc. - could bring about in one or two decades, national aggregate economic growth and high levels of development, as well as inter-regional, interpersonal and intersectoral equality. The same approach of emphasizing industrial-urban development may not yield similar results in such a short time in those developing countries with low levels of literacy and know-how, political instability, and shortage of investment resources.

There cannot be a universal strategy for all developing countries. For example, strategies to be proposed for countries like Malaysia and Haiti will not be the same:

/"In

rural industrialization, and while helping to achieve intensification in agriculture, by, among other factors, compulsory mobilization of its skilled personnel. Are the Governments of the developing countries able to carry out such mobilization of human resources without jeopardizing other important development objectives? Or are the skilled, educated people of the developing countries willing to offer their services voluntarily for the benefit of their less-advantaged countrymen? Or are the Governments of developing countries able to afford to pay high wages and lure their skilled personnel to rural underdeveloped areas, in the midst of their scarce financial resources?

> "Among the causes of poverty, I am sure, the material factors are entirely secondary - such things as a lack of natural wealth, or lack of capital, or an insufficiency of infrastructure. The primary causes of extreme poverty are immaterial, they lie in certain deficiencies in education, organization, and discipline. Development does not start with goods; it starts with people and their education organization, and discipline. Without these three, all resources remain latent, untapped, potential. There are prosperous societies with but the scantiest basis of natural wealth, and we have had plenty of opportunity to observe the primacy of the invisible factors after the war. Every country, no matter how devastated, which had a high level of education, organization, and discipline, produced an "economic miracle. In fact, these were miracles only for people whose attention is focused on the tip of the iceberg. The tip had been smashed to pieces, but the base, which is education, organization, and discipline, was still there .... Economic development is something much wider and deeper than economics, let alone econometrics. Its roots lie outside the economic sphere, in education, organization, discipline, and beyond that, in political independence and national consciousness of self-reliance .... Money alone does not do the trick. The quantitative aspect is quite secondary to the qualitative aspect" (Schumacher, 1973, pp. 168, 204, 196).

In fact, development may require, above all, as Schumacher (1973, pp. 192-193) claims, a psychological environment characterized by political stability, consensus and social cohesion. Unfortunately, many of the developing countries are burdened with political instability, and lack of consensus - where political stability is particularly important for the process of development because by definition it is a long-term, consistent process.

The case in point is the experience of the Republic of Korea in rural development. As has been analysed before, the potential development resources existing in rural areas have been effectively mobilized through co-operative efforts of the village populations and their leaders. The

/Government

> "In short, Malaysia is already at the stage where even basic needs can best be met by continued structural change, modernization, and industrialization, with a major effort of redistribution, rather than by concentrating on raising the productivity of a small minority who are really poor ... (On the other hand, in Haiti) there was, in short, virtually nothing to work with in the development of a modern industrial sector. The great mass of the population were illiterate, undernourished, and in ill health, so that sophisticated services could also play only an extremely limited role" (Higgins and Abonyi, 1978, pp. 41-42).

Likewise, since different regions in developing countries differ in terms of their literacy rates, skill levels, pattern of land ownership, productivity of agricultural land, a uniform set of alternatives should not be used for all regions in the same developing country.

Developing countries are imposed upon by various different constraints and limitations. These constraints and limitations are as follows. For example, the kind of land reform which was carried out in Japan under the Occupation by the Allied Forces or in the Republic of Korea after the Second World War might be politically impossible to carry out in most of the developing countries; or even though it can be carried out initially, due to centuries-old feudal relations, results of these reforms may eventually be reversed. Or it might be difficult to carry out decentralized decision-making where there are feudal relations in the rural community where peasants cannot express their own opinions; or it may be unacceptable to the Government because of the problems of ethnic separation movements. The rural population may be illiterate and may not be skilled for anything other than agriculture such that it may be difficult to employ them in an industrial sector. These constraints may be aggravated further if rural communities are located in inaccessible areas with large distances between them and each having a population of several hundred people only. These different conditions in each country make it important that different alternative strategies should be considered simultaneously. Rural-urban outmigration, service employment in the tourism sector, traditional arts and crafts, etc., should all be given due consideration as instruments for development as well as agricultural improvements or agro-based industrialization.

In developing countries careful consideration of alternative strategies is especially important because these countries are severely constrained by the scarcity of skilled human resources and capital. Among them, the need for skilled personnel is especially acute. China was able to carry out

Government provided proper incentives for involking the mobilization of potentialities. All the social conditions which Schumacher thinks are required for successful development were satisfied. Although the Saemaul Undong has not achieved industrialization of villages, it has led to substantial increases in farmers income and their standards of living.

The Chinese experience also provides a similar lesson. Although diametrically different in ideology, the Government was able to mobilize effectively the large stock of human resources for production in agriculture and industry on the basis of strong political leadership and consensus on national priorities.

Another important point is the importance of other accompanying factors whichever alternative strategy is chosen, the industrial-urban development or agricultural rural development. As we have seen, in those countries where rural-urban balance has been largely achieved (whether it be industrial-urban development as was the case of Japan and the Republic of Korea, or agricultural-rural development as was the case of Sri Lanka or dual strategy of industry and agricultural development as was the case of China), other factors are also at play: such as education, low population growth, increased productivity in agriculture, land reform, and income redistribution policies. Without some of these other factors, either alternative strategy could not have succeeded.

For example, without an educated labour force and know-how, the high level of development of Japanese industry could not have taken place. Likewise, one of the reasons why in Sri Lanka emphasis on agricultural-rural development could be maintained for a long period was the predominance of rural representation in the legislature through which the educated rural population were able to articulate its needs and demand the fulfilment of those needs. Education, not only formal but also informal, is important for bringing about an increase in production in the agricultural sector - which is one of the factors for increasing agricultural incomes and for decreasing rural-urban disparities. Improvements in agricultural productivity necessarily involve significant changes in the method of production, which can only be achieved through mass education of farmers. This kind of education is only possible when there is trust between leaders and the populace.

No matter which alternative strategy is selected, it will not be effective if the population growth rate is not reduced. For example, in Japan, the annual population growth rate is about 1 per cent, i.e., at

replacement level. If Japan had a population growth rate of 3 per cent instead of 1 per cent, its development strategy of industrialization may not have been successful in absorbing the surplus rural labour force, bringing about equalities, and raising per capita incomes. Or, if Sri Lanka had a population growth rate of 1 per cent instead of 2 per cent, it might not have the massive unemployment problems which it is facing now. Or, if developing countries with a population growth rate of 3 per cent follow Sri Lanka's strategy of emphasizing only agricultural-rural development and ignore industrial-urban development, they would face much severer problems than Sri Lanka in terms of massive unemployment and low economic growth on a per capita basis.

In addition, it should be recognized that even in Japan and the Republic of Korea in which the industrial-urban development has been the major strategy, interpersonal and interregional inequality was reduced initially by land reform and then by intergovernmental transfers, pricing and taxes/subsidies.

Even if the industrial-urban approach is taken, in bringing about urban-rural balances, a multiple approach in industrial development will be required, comprising those industries ranging from large-scale, modern, capital-intensive to small-scale, labour-intensive industries, and even to cottage industries of traditional arts and crafts. Simultaneous and complementary development of large and small, capital-intensive and labour-intensive industries is seen in the development of modern China as well as Japan and the Republic of Korea (Wu, 1978, p. 38). The sub-contracting relationship between large- and small-scale industries existing in Japan is a typical example. The coexistence of capital-intensive and labour-intensive industries in the Republic of Korea can be interpreted as an aspect of structural change of the economy from the labour surplus to the labour scarce situation.

What is important is the spatial allocation of different industries in the national territory. Industries of different kinds in terms of capital-intensity and skill-requirement should be located in correspondence with the hierarchy of human settlements and the network of infrastructure so that maximum use can be made of the scarce resources employed in the industries. For example, large-scale, modern, capital-intensive industries need infrastructure of high quality. Since developing cojntries are short of investible resources for industries and infrastructure as well as skilled manpower, these large-scale, capital-intensive industries should be concentrated in those areas where high-quality infrastructure and skilled manpower

/are

are already available such as in existing urban centres, as seen even in China. If not located in such an area, a sufficient number and quantity of industries should be concentrated so that high intensity of use is assured of the infrastructure provided and skilled manpower employed.

> "A 'modern' workplace, moreover, can be really productive only within a modern environment, and for this reason alone is unlikely to fit into a 'district' consisting of rural areas and a few small towns. In every 'developing country' one can find industrial estates set up in rural areas, where high-grade modern equipment is standing idle most of the time because of a lack of organization, finance, raw material supplies, transport, marketing facilities, and the like ... a lot of scarce capital resources - normally imports paid from scarce foreign exchange - are virtually wasted (Schumacher, 1973, p. 178).

In Pakistan, as well as in many other developing countries, a number of industrial estates in the peripheral regions suffered slow rates of occupation and difficulty in recruiting skilled labour force and managerial staff. Consequently, the rate of return on investment has been materially lower than planned (Townroe, 1977, pp. 29, 33, 34). On the other hand, for industries to be developed in rural areas, "the production method employed must be relatively simple, so that the demands for high skills are minimized, not only in the production process itself but also in matters of organization, raw material supply, financing and marketing" (Schumacher, 1973, pp. 175-176).

In selecting lower order urban centres in rural areas for industrial development, existing entrepreneurship and development resources should be exploited to the maximum extent. Those towns which already have development potential, such as those which are fast growing and those which are on the transportation network, should be selected. For example, it is stated that one of the weaknesses in the present development policies in Pakistan in selecting rural towns (markaz) is that "the initial centres designated were often very small (i.e., with population below 5,000) or were in competition with existing and somewhat larger trading centres" (Townroe, 1977, pp. 26-27).

/In

In other words, equality in the spatial context is a matter of scale. Even if the current spatial distribution of income or well-being, which often peaks at one or a few locations and tapers off outwards, is considered undesirable, the adoption of too many rural centres as growth centres is doomed to failure. A gradual increase in the number of peaks would be a surer way of achieving spatial equality.

One other point about rural towns is that they may have a high rate of labour turnover and this problem should be considered for rural industrial development. The reason is that in developing countries, rural-urban migration is mostly step-wise, i.e., from village to town to provincial centre and to national metropolitan areas. In developing countries towns mostly play a role of transition areas - such that the number of immigrants they gain from villages is approximately equal to the number of out-migrants they send to provincial centres (Gedik, 1978b, p. 45; Tumertekin, 1970, p. 165). The problem may not be how to direct rural migrants initially to these rural towns away from provincial centres or from metropolitan areas; but how to hold them in the rural towns.

In order for rural industries to facilitate equality in incomes, care should be taken that this source of non-agricultural earnings help the lower income group in rural areas. There is a big potential danger in developing countries that members of those households with cultivated land of larger than the average size will be mainly employed, because they will probably have higher education level, and better contact with the influential people who will be hiring. This appears to be the case in the Republic of Korea (Kim, 1978, p. 12).

3. Conclusions

The successful rural development in the Republic of Korea or Japan did not take place by itself. It was a part of the over-all development process which has been very successful. These two cases lead to the industrial-urban development model for achieving rural-urban balance. However, in order for this model to be feasible a host of social and political conditions must be satisfied as well as purely economic conditions. Above all, patience at least for a decade or two is required before the objective of rural-urban balance is achieved to a satisfactory degree.

In the case of Sri Lanka, equality was considered as the major development objective. Due to a number of favourable socio-economic characteristics, its agricultural-rural development model was able to

/achieve

achieve the major objective but the average level of economic well-being has hardly improved. To the extent that the people of the country are contented with an equilibrium at a low economic level but with a high level of equality, the model may be judged to have provided a solution.

In the case of China, a clear division was made; industry being capital-intensive took the role of expanding the national output and agriculture played the role of absorbing expanding and surplus labour force, while these two acted complementarily mainly in rural development. Income distribution improved materially after the revolution and the country is on the road to economic development. However, this approach did not lead to an instant solution. It took China 22 years (from 1952 to 1974) to raise per capita GDP from $75.20 (in mid-1970s constant prices) to $145.30, and a little shorter span of time for virtually eliminating unemployment.

In recent years greater attention has been paid to achieving equality of various kinds and a number of new policy measures have been devised in almost every country, including the Inpres programme of Indonesia and the New Community Movement of the Republic of Korea. These are the kind of policy instruments which can be applied within the context of either grand alternative model, the industrial-urban, the agricultural-rural or the dual strategy of industrial and agricultural. But, the degree of success which one policy instrument can achieve depends greatly upon the social environment in which the country is placed. Among many, national consensus on goals, social cohesion and political stability appears to be very important.

As stated at the beginning of this chapter, the equality between urban and rural areas is just one of the many desired goals. A single-minded emphasis on this goal without regard to its economic implications will lead to a situation which is inferior to some other feasible alternatives. The case of Sri Lanka could be interpreted in this way by some observers.

An important lesson which can be learned from a survey of efforts made for achieving rural-urban balance in several countries can be summarized as follows: despite growing and overwhelming attention paid to the new approach to development based on equality in distribution, a sound, steady and multifaceted approach to socio-economic development would be, perhaps, a more effective way of achieving the over-all development objectives, when the approach is constantly refined on the basis of new information made available to policy makers.

/Annex

Annex

THE METHOD OF ANALYSIS OF THE RURAL DEVELOPMENT POLICIES

(a) General

It can be assumed that the distribution of activities in the Republic of Korea was in an equilibrium of a certain kind in each of the observation years. The spatial pattern of activities changed from 1970 to 1975 in response to various factors. Some must have been related to general development and some others to specific policy measures in question. General development may have selectively favoured the development of those areas having specific characteristics at the beginning of the period. Thus, an attempt will be made below to identify the factors which have changed a welfare index of a geographic area and the functional relationship among them. Two kinds of variables are considered as possible factors which changed a welfare index: (1) the variables which represent the initial conditions of the area or state variables, and (2) the variables which represent an input or change during the period or input or increment/decrement variables.

For this purpose of analysis, the Republic of Korea has been divided into 170 geographic zones as presented in figure 2. The geographic division is based on administrative boundaries of city and gun. Wherever these administrative boundaries were altered since 1965, those effective in 1970 were used. There were 32 cities and 138 guns in that year.

Next, major socio-economic indicators for the zones have been selected from available data. In addition, those variables which represent spatial policies have been identified and, whenever possible, they have been quantified. These data have been taken for the three years: 1965, 1970 and 1975. As most spatial policies were adopted around 1970, the period of 1970 to 1975 has been intensively analysed. The definitions and the major characteristics of the variables used for analysis are contained below.

The analysis was undertaken first by identifying the welfare indicators, the change of which during the period of analysis would be explained by other factors, and then by attempting to identify the factors which explain the change in a welfare indicator.[a/] This was done by

/estimating

---

a/ Ideally, per capita income or some other direct welfare indicator should be used as a dependent variable. However, due to the lack of such data, indirect indicators have been used for analysis.

estimating through regression analysis an equation for the change in the selected welfare indicator. Because our concern is to know the causal relationship of policy variables with welfare indicators, emphasis was placed on finding factors which had led to the change in the welfare indicator in question during the period of analysis. The input variables considered as possible determinants include, of course, policy measures which had been applied during the period. The following have been explicitly examined: (1) the government contribution to the Saemaul Movement, (2) the private investment associated with industrial estate development and (3) the improvement in accessibility due to highway construction and improvement.

(b) The analysis of industrial estates

There are now more than 20 industrial estates which have been promoted by the Government. Some are intended to be labour-intensive and some capital-intensive. The particular nature of an industrial estate has been determined by various factors. What is intended below is to identify the factors which have formed the nature of the individual estate. The factors which have been chosen as possible factors are presented below.

(c) List of state variables

General note: The last two digits in the variable name refers to the year of observation, e.g., TPOP75 is total population in 1975.

Variable	Definition	Source
TPOP	Total population in 10^5 persons	1
APOP	Agricultural population in persons	2
PAP	Percentage of agricultural population	APOP/TPOP x 100 x 10^{-5}
NAPO	Non-agricultural population in persons	TPOP x 10^5 - APOP
PNAP	Percentage of non-agricultural population	NAP/TPOP x 100 x 10^{-5}
RATM	Percentage of school enrolment in the secondary school-age population	1
RATG	Percentage of college graduates in adult population	1
TDSE	Time distance in hours to Seoul	3
TDBU	Time distance in hours to Busan	3
TDA	Average time distance in hours to Seoul and Busan	(TDSE + TDBU)/2
TD	Time distance in hours to Seoul or Busan whichever is less	TDSE or TDBU

/VTDS

Variable	Definition	Source
VTDS	Inverse of time distance to Seoul	1/TDSE
VTDB	Inverse of time distance to Busan	1/TDBU
VTDA	Inverse of average time distance	1/TDA
VTD	Inverse of TD	1/TD
DOCT	Number of medical doctors	4
DPTH	Number of medical doctors per 1,000 persons	DOCT/TPOP x 1,000 x 10^{-5}
TELP	Number of telephones	4
TPTH	Number of telephones per 1,000 persons	TELP/TPOP x 1,000 x 10^{-5}
EXPORT	Value of export from industrial estates in 1975 in $US 1,000	5
EMPLOY	Employment in industrial estates in 1975 in 1,000 persons	5
IEINVT	Amount of private investment in industrial estates up to 1975 in $US 1,000	5

(d) List of input and increment/decrement variables

General note: The last digit in the variable name refers to the period of observation. 1 refers to the period of 1965 to 1970 and 2 refers to the period of 1970 to 1975.

Variable	Definition	Source
PPOPG	Percentage growth rate of total population	TPOP
DPNAP	Difference in percentage of non-agricultural population	PNAP75-PNAP70
DRATM	Difference in percentage of school enrolment in secondary school-age population	RATM75-RATM70
DRATG	Difference in percentage of college graduates in adult population	RATG75-RATG70
SEMLP	Per capita government contribution to the Saemaul Movement from 1973 to 1975 in $US	6
SMLPA	Saemaul government contribution per agricultural population from 1973 to 1975 in $US	6
INVTP	Private investment in industrial estates per capita from 1970 to 1975 in $US	5
PDTDS	Percentage change in time distance in hours to Seoul	$\frac{\text{TDSE75-TDSE70}}{\text{TDSE70}} \times 100$

/PDTDB

Variable	Definition	Source
PDTDB	Percentage change in time distance in hours to Busan	$\frac{TDBU75-TDBU70}{TDBU70} \times 100$
PDTDA	Percentage change in average time distance to Seoul and Busan	$\frac{TDA75-TDA70}{TDA70} \times 100$
PDOCG	Percentage growth rate of the number of medical doctors	$\frac{DOCT75-DOCT70}{DOCT70} \times 100$

(e) Sources of data

1) Population and Housing Census, 1966, 1970 and 1975.

2) Obtained from Korea Development Institute.

3) Investigation of Effectiveness of Expressways (Korean), Korea Public Corporation for Expressways, and information supplied from the Ministry of Construction.

4) Statistical Yearbooks, 1970 of each province and Report on Major Administrative Indicators, 1975

5) Report on Industrial Estates, 1975.

6) Saemaul Movement, Ministry of Interior, 1973, 1974 and 1975.

(f) Additional information on data organization

1) They did not take a population census in 1965, but in 1966, so that we estimated population data in 1965 by using 1966 population census.

2) In Korea, school attendance is compulsory for all children up to the age of twelve. Therefore, the secondary school education is voluntary, and we consider the ages for secondary school to be between the thirteen years old and eighteen years old.

3) There are no official statistics on time distances from cities and countries to Seoul and Busan. To estimate time distance, first we have classified roads into five groups, national highways, paved national roads, unpaved national roads, paved provincial roads, and unpaved provincial roads. Secondly, we have assumed average speed for each road to be 80 km/hr., 50 km/hr., 40 km/hr., 45 km/hr., and 35 km/hr., respectively. Then we have multiplied distance by average speed to calculate the time distances.

/(g)

(g) Major characteristics of selected variables

Variable	Mean	Standard deviation	Minimum	Maximum	Unit
TPOP70	181,328	437,647	14,859	5,433,198	persons
TPOP75	204,144	559,872	29,479	6,889,502	persons
APOP75	77,932	43,787	6,946	235,589	persons
PAP70	67.88	28.21	1.40	99.20	percentage
PAP75	59.09	26.54	0.60	88.50	percentage
RATM70	41.73	12.29	19.90	70.93	percentage
RATM75	59.82	9.91	33.92	85.78	percentage
RATG70	2.55	1.99	0.72	14.13	percentage
RATG75	2.84	2.10	0.97	14.48	percentage
TDSE70	4.04	2.12	0.20	9.87	hours
TDSE75	3.11	1.51	0.20	6.50	hours
TDBU70	4.69	2.10	0.20	10.44	hours
TDBU75	3.96	1.88	0.20	9.15	hours
TDA70	4.36	1.43	2.37	8.25	hours
TDA75	3.53	0.92	2.24	6.65	hours
DOCT70	70.03	507.12	2.00	6,211.00	persons
DOCT75	81.06	541.97	2.00	6,910.00	persons
TELP70	3,154	17,495	0	206.532	units
TELP75	6,265	33,978	198	429,912	units
SEMLP2	0.913	0.467	0.030	2.380	1,000 won/pers
SMLPA2	1.607	0.759	0.400	5.566	1,000 won/pers
PDTDA2	-15.70	12.55	-45.23	0.21	percentage
PDOGG2	-30.53	299.54	-3,615.15	250.00	percentage

/BIBLIOCRAPHY

BIBLIOGRAPHY

Alif, M.S. The rural-urban balance in Sri Lanka. Habitat International, vol. 3, No. 314, 1978; pp. 325-330.

Bieda, K. The structure and operation of the Japanese economy. Sydney, John Wiley and Sons, 1970.

Blackton, John S. Local government and rural development in Sri Lanka. Ithaca, New York. Cornell University, 1974.

Boltho, Andrea. Japan, an economic survey, 1953-1973. Oxford University Press, 1975.

El-Shakha. City systems, primacy and development. Journal of Devloping Areas, 1968.

Fei, John C.H. and Gustav Ranis. A model of growth and employment in the open dualistic economy: the case of Korea and Taiwan. Journal of Development Studies 1:1, 1975; pp. 32-63.

Gedik, Ayse. Spatial population distribution in postwar Japan (1945-1975) and implications for developing countries (1978a). Japan, University of Tsukuba, November 1978. (Institute of Socio-Economic Planning, Discussion Paper No. 35.)

_____. Sizes of different migration flows in Turkey, 1965-1970: possible future directions and towards comparative analysis (1978b). Japan, University of Tsukuba, December 1978. (Institute of Socio-Economic Planning, Discussion Paper No. 36.)

Glickman, Norman J. The management of the Japanese urban system: regional development and regional planning in postwar Japan. International Institute for Applied Systems Analysis, Research Memorandum 77-47. Laxenburg, Austria, 1977.

_____ and E. Gencer. An empirical analysis of the Japanese urban public finance system. University of Pennsylvania, 1976. (mimeo.).

Griffin, Keith and Ajit K. Ghose. Growth and impoverishment in the rural areas of Asia (1978). Paper presented for UNCRD Seminar held at Nagoya, Japan, 31 October - 10 November 1978.

Higgins, Benjamin and George Abonyi. Basic needs and the unified approach: making them operational. UNCRD Working Paper, WP: 78-01. Nagoya, Japan, 1978.

Jayawardena, L. Case study on Sri Lanka. In H. Chenery et al. Redistribution with growth. Oxford University Press, 1974.

Karunatilake, H.N.S. Changes in income distribution in Sri Lanka. In Central Bank Staff Studies. Colombo, April 1974.

Khan, Azizur Rahman. The Chinese experience. In International Labour Organisation Poverty and landlessness in rural Asia; pp. 253-280. Geneva, 1977.

/Kim, An-Jae.

Kim, An-Jae. New dimensions of small town development: a case study of five lower-order centres in Korea. UNCRD Working Paper, WP: 78-11. Nagoya, Japan, 1978.

Klein, L.R. and K. Ohkawa (eds.). Economic growth: the Japanese experience since the Meiji Era. Howewood, Ill., R.D. Irwin, 1978.

Kornhauser, D. Urban Japan: its foundations and growth. London, Longman Group Ltd., 1976.

Kuroda, Toshio. A new dimension of internal migration in Japan. (Institute of Population Problems, Ministry of Health and Welfare, Tokyo, English Pamphlet Series, No. 69.)

Kuznets, S. Economic growth and income inequality. American Economic Review, 45:1, 1955; pp. 1-29.

Lawas, Jose M. Regional development planning: brief statements on issues of current concern in the Philippines (1978). Paper presented for UNCRD Seminar held at Nagoya, Japan, 31 October - 10 November 1978.

Lee, E.L.H. Rural poverty in Sri Lanka, 1963-1973. In International Labour Organisation Poverty and landlessness in rural Asia. Geneva, 1977.

Lo, Fu-chen, Kamal Salih and Mide Douglass. Uneven development, rural-urban transformation, and regional development alternatives in Asia (1978). Paper presented at UNCRD Seminar held at Nagoya, Japan, 31 October - 10 November 1978.

Marga Institute. National development and rural-urban transformation: the Sri Lanka case study; part 1 (1978). Paper presented at UNCRD Seminar on Rural-Urban Transformation and Regional Development Planning held at Nagoya, Japan, 31 October - 10 November 1978.

Mera, Koichi. Population concentration and regional income disparities: a comparative analysis of Japan and Korea (1978a). In Niles M. Hansen (ed.) Human settlement systems; Chap. 7, pp. 155-175. Ballinger Publishing Co.

_____. Alternative development strategy for coping with urban-rural imbalances: a two-regional growth model (1978b). Paper presented at Conference held at University of Tsukuba, Japan, August 1978.

_____ and Byung-Nak Song. Spatial policies for population in the context of economic development: the case of the Republic of Korea (1978). Paper presented at Conference held at University of Tsukuba, Japan, August 1978.

Mills, Edwin S. and Byung-Nak Song. Korea's urbanization and urban problems 1945-1975. (Korea Development Institute Working Paper No. 7701, September 1977.)

Ohkawa, K. and H. Rosovsky. Japan's economic growth. Stanford University Press, 1972.

Organization for Economic Co-operation and Development. Salient features of regional development in Japan. Paris, 1971.

/Patrick, H.

Patrick, H. and H. Rosovsky (eds.). Asia's new giant: how the Japanese economy works. Brookings Institution, Washington, D.C., 1976.

Rawski, Thomas G. Industrialization, technology and employment in the People's Republic of China. (World Bank Staff Working Paper No. 291, August 1978.)

Richardson, Harry W. City size and national spatial strategies in developing countries. (World Bank Staff Working Paper No. 252, 1977.)

Rustow, Dankwort A. (ed.). Political modernization in Japan and Turkey. Princeton University Press, 1964.

Salih, Kamal and Fu-chen Lo. Regional disparity and city system: standing on one leg in the third world regional development (1978). Paper presented at Conference held at University of Tsukuba, Japan, August 1978.

Samyer, M. Income distribution in OECD countries. Paris, OECD, 1976.

Schumacher, E.F. Small is beautiful: economics as if people mattered. London, Blord and Briggs Ltd., 1973.

Senaratne, S.P.F. and E. Wanigasekara. A review of relevant national policies and programmes in respect of rural-urban relations in Sri Lanka. UNCRD Working Paper, WP: 78-05. Nagoya, Japan, 1978.

Song, Byung-Nak. Economic growth and rural-urban relations in Korea (1977a). Paper prepared for the UNCRD Colloquium held at Nagoya, Japan, 7-18 November 1977.

_____. The pattern of Korean growth, 1963-1973: in international perspective with special consideration of the Japanese pattern (1977b). (Korea Development Institute.) (mimeo.).

_____. Economic development and the rural-urban transformation in Korea (1978). Paper presented at UNCRD Seminar on Rural-Urban Transformation and Regional Development Planning held at Nagoya, Japan, 31 October - 10 November 1978.

Tachi, Minoru. The inter-regional movement of population as revealed in the 1970 census. Area Development in Japan; No. 4, pp. 3-24. Tokyo, Japan Center for Development Research, 1971.

Townroe, Peter M. The case for national urban growth strategy for Pakistan. University of California, Institute of Urban Regional Development, Working Paper No. 276. Berkeley, 1977.

Trewartha, G. Japan: a geography. Madison, University of Wisconsin Press, 1965.

Tumertekin, Erol. Gradual internal migration in Turkey: a test of Ravenstein's hypothesis. Review of the Geographic Institute of the University of Istanbul, International Edition, No. 13, 1970-1971; pp. 157-179.

/United

United Nations Center for Regional Development. Urban development strategies in the context of regional development (1974). Report of the UNCRD Seminar held at Nagoya, Japan, 28 October - 8 November 1974.

Williamson, J.G. Regional inequality and the process of national development: a description of the patterns. Economic Development and Cultural Change, 13, 1965; pp. 3-43.

Wu, Chung-Tong. Development strategies and spatial inequality in the People's Republic of China (1978). Paper presented for UNCRD Seminar held at Nagoya, Japan, 31 October - 10 November 1978.