

E. Pusan, REPUBLIC OF KOREA

I. Summary of Conditions.

Pusan in Korea's second largest city, and its largest port. Like Kobe, Japan, its location and physical condition contribute to its strengths and present specific problems as well. Situated on a relatively mountainous inlet where the Nakdong River enters the Korean Straits and the Pacific ocean, it is a natural deep water port, well sheltered against storms. Its topography give it both deep water for the port, and serious problems in finding land for construction. The advantages far outweighed the problems, however, until the present. The city has grown from a small, isolated fishing village to a major and highly congested port city of almost four million people. The period of most rapid growth came in the past thirty years, when the city doubled its population size twice. From 1965 through 1980, average annual growth rates topped five percent. On the whole, this growth has been accompanied by a general increase in the quality of life and in the position of women, which parallel the progress made throughout the nation as a whole. On the other hand, rapid growth has brought a series of urban problems, including transportation congestion, water quality and sewage. The major causes of this growth lie in the central government's economic development policies; and those policies also appear to be part of the cause of many of the city's current problems.

The central government's major thrust for economic development since 1962 has been highly successful for the country as a whole. In a mere three decades, The Republic of Korea has been transformed from a low income, rural-agrarian society with high mortality and fertility, to a higher income urban-industrial society with low mortality and fertility, This is certainly one of the most rapid modernization transformations to be found in the world today.

Pusan has not only taken part, it has played a leading role in the national transformation. It was designated as the major port, at the terminus of rail and road lines leading north to Seoul. Along this axis a major portion of Korean industrialization has taken place, with Seoul-Inchon acting as a strong growth pole in the north, and Pusan in the south.

Population Dynamics. Korea was one of the earliest countries to adopt a national family planning program, and its has been one of the most successful in reducing its fertility. The total fertility rate fell from about six in 1960 to about 1.8 (below replacement level) today. The government family planning program was very effective in providing services to the rural areas and to the poorer sections of the population. With the growth of urbanization and incomes, the private sector plays a larger role in reducing fertility, through the government program remains in highly effective one.

Population growth in Pusan has been very rapid, fueled by both natural increase and net in-migration. The limits appear to have been reached, however, and for the past five years the migration stream has turned outward. Out-migrants now exceed in-migrants by 30-50,000 per year. On the other hand, births continue to exceed deaths by about 30-40,000 per year, so that the city's population appears to have stabilized. At the same time, however, the surplus of births is the result of a young age of the population, rather than a high birth rate. Pusan has

followed the nation in reducing its total fertility rate to below replacement level, and it is only the young overall age that keeps natural increase positive. To the extent that the in-migration stream remains youthful, as it might reasonably be expected to do, natural increase may continue to be positive and to balance the out-migration, sustaining the overall city size.

Quality of Life. Objective indicators show a general increase in the quality of life in the country as a whole, which is matched in Pusan. Infant and maternal mortality rates have dropped steadily in the past three decades, and now are on a level with the world's high income industrialized countries. Life expectancy has increased accordingly, and is also at the level of the wealthy countries. Like most of the world, life expectancy for women is higher than for men, and the gap has even increased slightly in the past two decades. Today life expectancy at birth for Korean women is 75 years, against 67 years for males. School enrollment has also increased to the point of universal education from primary through secondary school. All Korean children receive a thorough 12 years of education, and a growing proportion go on to the university as well. The overall unemployment rate remains very low, as rapid economic development and fertility decline have worked together to produce a mildly labor-short society. Caloric intake has increased steadily, with current levels well above the minimum standard. In all of these national figures, Pusan shows the same condition as the rest of the country. Home ownership in Pusan is slightly lower than the national average, but still stands at about 65 percent. Access to clean water in the city is almost total, covering 97.8 percent of the population. On the other hand sewage treatment covers only about 86 percent of the city area, and only 45 percent of human toilet waste is treated. As we shall see below, water quality and water pollution are major problems.

Status of Women. Objective indicators show that women have participated fully with men in the rising standard of living. Life expectancy for women has increased along with that for men, and is now substantially higher. Education through secondary school is as high for girls as for boys. The progress can be seen readily in the educational attainment rate by age. For the population above 50, which was educated about 40 years ago, women had only an average of 3.9 years of school, compared with 7.7 years for men. For the population 16-20, which has been educated in the past five years or so, women have an average of 7.8 years of education, compared with 7.7 years for men. In effect, gender equality has been achieved in health and educational attainment.

This is not the case for employment, leadership and political representation, however. Women are not well represented in higher administrative positions, though the Pusan city government has achieved some advances in equal opportunity hiring. The ratio of female to total city employees (including teachers) rose from about 10 percent in 1970 to just over 20 percent today. Women as a proportion of new employees rose from 20 percent to over 70 percent, and the city government estimates that by the turn of the century, the sex ratio in city employment will be about equal. At the same time, there is only one woman among the 21 city bureau chiefs. Women occupy many middle level positions, however, and it is expected that their representation at the higher levels will increase with time. In teaching positions, women occupy about half of the primary and middle school positions, but they drop to 20 percent or less at high school and university levels. Women now constitute about a third of production workers, and almost half of the tertiary work force. For the most part, city

administrators do not feel that the representation of women is a serious issues, through there are a number of non-governmental organizations pushing for greater equality. Their overall strategies have been persuasive rather than radical and confrontational.

2. Major problems and Projects.

Transportation is clearly one of the city's most pressing problems. The system is highly congested by both port and urban traffic. The mass transit system is very underdeveloped supporting the rapid growth of private transportation, which adds to congestion, parking problems and air pollution. The cause clearly lies with weak or non-existent transportation planning in the 1960s thrust for economic development, which exacerbates all problems in a self-reinforcing manner. Problems that could have been solved earlier at lower cost, now demand exceptionally large investments, which leads to their postponement, and even higher costs in the future. Underlying much of the weakness in planning is the domination of the central government, and the lack of authority and resources in the city government itself

At present the transportation system must move people through 6.6 million individual trips per day. In addition, it must move over 750,000 tons of cargo and 7,000 container TEU per day. Port cargo moves through the city, increasing the congestion. Major road systems have been built and more are planned, but they are constantly behind the growth of traffic. A subway line extends only 26 kilometers and accommodates about 8 percent of the daily individual trips. A privately owned bus system with 48 firms and 2,700 buses carries 43 percent of the daily traffic. Although the carriers are private firms, fares and routes are controlled by the central government. Since transportation fees are an important part of the centrally calculated price index, the government is reluctant to permit fare increases, which leads to a deterioration of services. Rising incomes and the lack of an effective mass transit system has led to an explosive growth of private cars and trucks. Total registered vehicles grew from just over 3,000 in 1961 to more than 400,000 today. Fully 88 percent of the vehicles today are privately owned. Passenger cars alone number over 250,000, constituting 60 percent of all vehicles. The weakness of mass transit and the overall congestion have led to an unusual situation where private taxis provide about one-quarter of all trips.

Planning for a solution to the overall transportation problem is hampered by the lack of authority and resources in the city government. Planning is done by the central government, which is far away from the city's actual problems. The result is a planning process dominated by road building. As we have seen in other studies, this amounts to an attempt to move vehicles more efficiently, rather than an attempt to move people and goods more efficiently. The likely result is more vehicles and more congestion. Expanding the subway, which would help relieve the problem, has become exceptionally expensive, and each delay only increases the expense. With little local authority and only weak support from a distant central government, the transportation problem does not appear to have a reasonable solution at this time. A sign of the distress is that during the last ten years, the director of the city's transportation bureau has been replaced 13 times.

It is also possible that better local port planning could help relieve the congestion problems and could also lead to a more rational integration of port and urban activities. The City of Kobe in Japan provides a model of how such integration can be done effectively. The port of Pusan is controlled by a specialized Maritime ministry in the central government. Its

concern is with making the port more productive for the nation as a whole and taking the revenues from the port. The city has no control of the port and does not directly receive port revenues. Thus it cannot integrate port planning into overall city planning.

Water Quality. A second major problem for Pusan is the quality of its water. Quantity is not a serious problem, as the great majority of the population has access to water. Quality is a problem, however, and much of the problem lies outside of the city's control. Pusan takes most of its water from the Nakdong River, which originates in the mountains of central Korea and flows out to the sea at Pusan. Much of the upstream part of the river is lined with towns and industrial centers, and much of the waste from these centers enters the river untreated. Pusan inherits this major polluted water source. The central government's Environmental Protection Agency does have laws and regulations against discharging untreated wastes, but these are often not enforced, or the fines are smaller than the cost of treatment, leading private producers to risk non-compliance. Moreover, it is feared that compliance would increase costs sufficiently to reduce competitiveness in both domestic and international markets. Pusan has asked for central assistance in planning for the entire watershed, but the outlook is not promising. It would require that upstream areas limit or reduce their growth and development, and this is not something they would be willing to do. Pusan's only solution is to build larger and more expensive water treatment facilities, and even these cannot cope with the increased pollution. An additional problem is that earlier long term planning focused on a few large, highly centralized treatment plants, though now it appears that a number of smaller plants would be more efficient and less costly. Given central government control, however, the city has no capacity to change the original plans.

Industrial Restructuring. Pusan's industrial infrastructure grew very rapidly in the period of rapid urbanization. This led to increased demand for land and to exceptionally high land prices. Early industrial growth was concentrated in labor intensive industries, such as textiles, shoes and other wearing apparel. Today, the movement is toward service industries, which need a new infrastructure, in turn running into the problem of high land prices. A reasonable solution might be to encourage production industries to move to smaller surrounding towns, and to concentrate Pusan's development in the service sector. This, however, would require a larger administrative area for planning, or the formation of a large scale regional plan. Authority to create such a regional plan is in the hands of the central government, however, and is something over which the city administration has no control.

Current plans are to move to the west of the city, across the mouth of the river, for new urban development. This is one area where the city has had some success in persuading the central government to increase its administrative area. A major expansion took place in 1963, doubling the city's size, filling up the area to the east bank of the Nakdong river. In 1978 another major expansion took place to a large island between the two major forks of the river in its last ten kilometers before emptying into the sea. Finally, in 1990, another major expansion occurred to the west of the river, including a large island in the bay. It is in this newly extended western side that new land development is being planned. Five major residential and industrial complexes are being planned under what is known as the Western Pusan Comprehensive Development Plan. Some public investment is provided, and private companies are permitted to undertake the developments, financed by the sale of developed

land. This is an area in which there is rising opposition to development by non-governmental environmental groups, which are growing in numbers and strength in Korea today.

In addition, a previous Mayor proposed in 1988 the creation of an artificial island to be constructed in front of the South Port in the heart of the city. The plan was fashioned on the highly successful Port island in Kobe. The plan called for an island of 5.8 hectares, for combined residential, business and port facilities. It was projected to cost US\$ 6.5 billion and to require 8 years for completion. Since that time, three new Mayors have occupied the position at the head of the city, only about US\$ 12 million has been spent on planning, and the original plans have been scaled back considerably. The central government has not been very supportive, and it now seems likely that the plan will not be carried out.