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PLAN B

UP 889 - Research Paper

National Development Plan of Taiwan

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INTRODUCTION

Over the past forty years, Taiwan has experienced remarkable economic success and a spectacular rise in its material standard of living. More recently, however, amid rising prosperity and affluence, there have been signs of imbalance and dislocation, including traffic congestion, environmental pollution, and a lack of cultural and recreational facilities. Moreover, a tightening supply of low-skilled labor and a declining work ethic are posing a threat to business activity and hampering the further improvement of the nation's quality of life.

The economic imbalances and social dislocations are largely a result of insufficient investment in the areas of transportation, culture, and education. Development in these areas has failed to keep pace with the economic development.⁴ This indicates a need of integrated comprehensive planning to accelerate the nation's modernization process. The "Six-Year National Development Plan", a forward looking blueprint for national development, seeks to address that need. This plan proposes a series of important public construction projects aimed at resolving current development bottlenecks, and calls for the promotion of social and economic equity, the fair distribution of the fruits of development, and improvement of the national quality of life. Its major priorities are to rebuild social and economic order and promote balance development. The four key goals include:^{4, 9}

- 1) Raising national income,
- 2) Providing sufficient resources for continued economic growth,
- 3) Promoting the balanced development of various regions,
- 4) Raising the national quality of life.

STATEMENT OF PURPOSE

By any standard, NT (New Taiwan Dollar) \$8.2 trillion, about US\$300 billion, is a tremendous amount of money. When the government of Taiwan launched its "Six-Year National Development Plan" (1991-1996), which calls for spending this amount of money on improving Taiwan's overburdened infrastructure, people were first stunned by its expansiveness and extraordinary cost. Besides legitimate concerns about the challenge of financing the 775 projects which make up the plan, people also worried about the government's ability to do so much so soon. Both the Premier, who initiated the plan, and the Council for Economic Planning & Development (CEPD), which pulled the plan together in six months, indicated from the beginning that constant review and evaluation were essential and all the construction work should be implemented with thorough planning, good quality, and at reasonable price.⁹ However, it is impossible, for example, to predict accurately the problems associated with building a single mass-transit tunnel along one major artery in Taipei. Try multiplying the possible problems by 775 projects administered by close to thirty ministries, agencies, and local governments! Therefore, in fact, throughout the plan's implementation, review and revision are very much under way. Various projects, large and small, are already behind schedule because of unforeseen complications in acquiring adequate land, labor, and technology. There are concerns, similar to those about the nation's capability in achieving the Ten Major Construction Projects two decades ago, when the late President Chiang insisted on carrying out the projects, saying that "If we don't execute the projects, we will regret it tomorrow." ¹⁵

In this spirit, we should learn and continue to follow. Even with major bottlenecks ahead, we must not assume that these problems won't be solved by firm political commitment and a more efficient administrative system. The national development plan, begun in 1991, will soon be three years old. While the plan's goals can be expected to remain constant, considerable adjustment can be expected in the ways to fulfill them. Taiwan is clearly in the midst of structural transformation, eagerly seeking the change from a newly industrial country to a developed country. Meanwhile, it's a good time and experience for me to learn certain specific lessons from the process of implementation of the national comprehensive plan, as well as to try to constitute some theoretically feasible suggestions to improve the plan at a certain level through the analysis of decision making policy, social and cultural changes, and economic impacts in accordance with the subjective and objective environments at home and overseas.

BRIEF BACKGROUND

1. Social Changes

Although, over the past forty years, Taiwan had experienced very harsh military threats and invasions from the mainland China Communists, yet, fortunately, under the long-term, governmental planned economic leadership, we also started to advance from the agricultural and rural area to the industrializing and urbanizing society during the 1960s.¹ The gross national product (GNP) has grown from NT \$17,495M (US\$660 M) in 1952 to NT \$5,770,163M (US \$217,742M) in 1993, a growth of 329 times in only 41 years.^{12,13} This, definitely, has a strong influence on urban development. However, the territory of Taiwan is only 35,873 square

kilometers in size, and it is almost impossible to grow any bigger, but the 1952 population of about eight million increased rapidly to more twenty-one million in the 1993, which means that the population density has grown 2.6 times over that period of time. This could be the second highest population density in the world.^{1,10} Also, the highly centralized urban population in the two major metropolitan areas, Taipei (north) and Kaohsiung (south), which caused the population growth rate to decrease in the central and east part of Taiwan, results in the considerable regional disparity in population distribution.

2. Concept of Development

As a result of these factors, we encounter severe problems in the metropolitan areas, such as overcrowding, traffic congestion, lack of public infrastructures, environmental pollutions, land misuse, and inadequate housing supply. They also exist in the other areas less severely. Thus, our government tried very hard to solve these problems and proposed a huge, systematic, and constructive project, the so-called "Six-Year National Development Plan", which indicates a need for comprehensive planning to accelerate the nation's modernization process, and it has been adopted in 1991. The plan's primary purposes are: ^{6,9}

- 1) to increase the gross national product (GNP) and economic competence;
- 2) to make up the imbalance development between the urban and rural areas;
- 3) to build a more reasonable resources distribution system;
- 4) to propose a series of important public construction projects aimed at resolving current bottlenecks;
- 5) to call for the promotion of social and economic equity as well as the fair distribution of the fruits of development; and

6) to upgrade the peoples' living standard as in the western welfare countries.

About 60 percent of the projects in the plan in terms of financial requirements are ongoing projects that have been individually approved in accordance with administrative procedure. The various projects have different completion dates. Some will be completed in less than six years; others will require more than six years to finish.⁴

Actually, since 1953, the government has carried out ten medium-term economic development plans, and annual plans have been implemented since 1972. All but one of the medium-term plan have covered four years (the exception being six years during the oil crisis). However, the current six-year plan is an integrated administrative branch of the government, just like a total comprehensive plan that sums up all the economic and cultural projects planned by most previous planners and made the goal of the plan more clearer.^{14,15} In other words, it becomes the most important and gigantic plan of Taiwan's governmental authority, and only through a concerted effort by both the government and people will Taiwan be able to meet these challenges, overcome the problems that now face it and continue to enjoy long-term growth and stability.

3. Plan Formation

Formation of the plan required a remarkable amount of teamwork. The various projects were first proposed by twenty-five ministries and agencies of both the local and central governments. Proposals for public investment projects were drafted by the Taiwan Provincial Government, and the Municipal Governments of Taipei and Kaohsiung, then screened and compiled by the CEPD in accordance with policy goals, as well as the availability of national resources. The final plan, incorporating input from government, business leaders, legislator, scholars, and other experts, was

approved by the Executive Yuan (Cabinet) in the middle of 1991.^{4,6,9} Therefore, successful implementation of the plan will depend not only on the efforts of individual government agencies in their own respective areas but also on active participation by the private sector and strong support from the general public.

In order to make a fair and meaningful study for this planning program, two main categories, 1) the overall frameworks and 2) process of the plan, will initiate the research objectives of this paper.

OVERALL FRAMEWORKS

As mentioned earlier, the plan is divided into four key policy goals: 1. Raising national income; 2. Providing sufficient resources for Continued economic growth; 3. Promoting balanced regional development; 4. Raising the quality of life. Due to the huge and complex structure of this plan, it is not practical and necessary to study every details of these projects included in the plan, and, as a matter of fact, I would like to focus more on the overall guidelines and predicted indexes than other items to appropriately introduce the policy purpose of the plan.

1. Raising National Income

Sustained economic growth is an indispensable prerequisite for greater job opportunities, higher income, and improved national welfare. To ensure sustained growth over the next six years, the government will launch a number of major public development projects which will stimulate domestic demand, enhance overall productivity, and promote efficient resource allocation to assure stable future growth. The economy is targeted

to grow at an average annual rate of 6.0 percent and consumer prices are expected to rise by no more than 5.0 percent in 1991 and by no more than 3.5 percent each year for the rest of the period. Major objectives and policy measures are as follows:^{2,4,8,9,14}

1) Agriculture - Agriculture will maintain zero growth and its development will focus on types of production that are technology-intensive and high value-added, and have considerable market potential. The objective to narrow the development gap between the urban and rural areas is to improve the efficiency of farmland use, and upgrade the community services as well as living conditions in remote neighborhoods. Setting up forest areas for both agricultural and recreational purposes are all the basic policies.

2) Industry - Strengthening Research and Development, promoting production automation, upgrading product quality, and controlling pollution will be major priorities in industrial development. Annual industrial growth will average 6.9 percent, with manufacturing expanding 6.5 percent per year. There will be considerable improvement in the structure, with both heavy and light industries. At the same time, helping the finances of small- and medium- size enterprises and improving their management to reduce their vulnerability are also an essential policy for industrial development.

3) Services - The service sector will be required to provide modern, high-quality, services not only to meet the production and productivity goals of industry but also to satisfy the demands of increasingly affluent and sophisticated consumers. The following policy guidelines have been formulated with a view to achieving annual growth of 7.8 percent in the service sector during the plan period:

A) Strengthen the framework of laws and regulations governing and facilitating the operation of service industries.

B) place special emphasis on manpower planning and training in service industry.

C) Achieve a more rational distribution of service establishments and step up the procurement of land required for the construction of service facilities.

2. Sufficient Resources for Economic Growth

Efficient productive resources are the key to industrial modernization and to attaining the economic growth target. With that in mind and to ensure the development of modern industrial establishments at optimal locations, the government will carefully monitor the distribution of productive resources, like land, water, energy, and transportation facilities during the plan period. It also envisions the emergence of Taiwan as a financial center, a regional transportation hub, and a major leader in high technology in the western Pacific. A preliminary estimate for public projects is NT\$1.9 trillion for government expenditure; NT\$2.1 trillion coming from investment by public enterprises and will be provided out of their own finances; NT\$600 billion open for private investment; and NT\$3.6 trillion to be provided through government capital accounts. Of this latter amount, NT\$2.5 trillion will be financed with government current surpluses, and the remaining NT\$1.1 trillion will be financed in part with government bonds and in part with proceeds from the sale of public properties and the stock of public enterprises. It should be noted, however, that all projects are subject to change due to budgetary constraints.^{4,6,8,14}

Planners are optimistic about obtaining the necessary capital, because the fixed capital needs for the plan, after deducting expenditures for land, condemned buildings, and nationwide insurance, will equal about 13.8 percent of the estimated GNP of US\$1.4 trillion for the six years compared with the 15 percent of GNP required for the Ten Major Construction

Projects completed in the 1970s. Meanwhile, based on past performance, private investment during the plan should total around 12.5 percent of GNP, so the combined public and private investment is expected to be 26.3 percent of GNP during the planned period, whereas the national saving rate can be expected to stabilize at 29.3 percent of GNP. Thus, the supply of capital will exceed demand.^{12,14}

Major construction projects can be grouped into six principal categories as detailed below:^{2,4,6,7,9,12,14}

1) To upgrade industrial facilities: Various measures for industrial zoning and development will be carried out to modify the industrial structure and provide for balanced regional development. Such measures include:

A) Preparations for establishing new high-technology industrial parks, and basic industrial zones in coastal areas.

B) Promotion of the rational distribution of service industries and development of multiple downtown areas in large cities.

C) Establishing regional and local branches of administrative, managerial, financial, and information agencies to supply better service for public.

D) Setting up service industrial centers in local living perimeters to promote efficient growth of service industries in regional center or multiple downtown areas.

2) To solve land problems: Unproductive farmland will, at the right time and in the right proportion, be converted to intensive industrial, commercial, residential, and recreational uses, and used to build major transportation facilities. Specific measures call for developing the Changhua coastal industrial zone (middle part of Taiwan), the Yunlin coastal basic industrial zone (central west), and the Hualien cement production zone (east).

3) To improve and expand transportation system: Developing Taiwan into the transportation hub of the western Pacific, the following measures are carried out.

A) The second trans-island freeway, the first high-speed railway, and fourteen other major east-west highway networks are under construction.

B) Improve harbor administration, facilities, and the construction of access to highways.

C) Expand the Taipei and Kaohsiung international airport, and upgrade flight control systems, customs procedures, and better rapid transit system between the Taoyun international airport and Sungshan's domestic airport (Taipei).

4) Water resource conservation plans include:

A) Accelerating the construction of the Yuli (east), Tainan (south), and Chichi (north) reservoir; expanding existing city water supply facilities to make running water more widely available.

B) Updating field irrigation and drainage facilities, intensifying plans for the management of reservoir catchment areas.

C) Strengthening preventive measures against water pollution, and improving management of ground water extraction.

5) To ensure a stable energy supply: The following measures are to be implemented:

A) Diversify both domestic and imported sources, emphasizing the use of liquefied natural gas in particular.

B) Develop energy technology, conduct research on energy conservation, and explore new sources of energy.

C) Promote a rational energy pricing structure and raise the efficiency of energy use.

6) To enhance manpower training: Making optimal use of manpower resources and raise labor productivity include:

A) Broadening the scope of professional and career education with life-long opportunities for study and raising the level and quality of vocational training.

B) Strengthening labor laws, improving the working conditions, employment services, and harmonious relations between labor and management.

3. Balanced Regional Development

In order to achieve more balanced development and avoid the pitfalls associated with rapid industrialization and urbanization, population congestion must be alleviated, industrial sites have to be distributed more evenly, and systems for the delivery of modern community services need to be more equitable. Moreover, differences in regional development must be mitigated, transportation construction intensified, and the living standard of all regions elevated, so as to achieve the goal of balancing regional development. Toward this end, the plan gives top priority to accelerating the development of backward areas by improving their housing, schools, cultural, medical, transportation facilities, and public service. The objective is to realize the full potential of each region, so as to slow down the flow of population to overcrowded urban centers and to narrow regional differences in development. Other objective also include to provide people of each region with satisfactory job, comfortable recreation, and healthy social atmosphere.

4. Raising the Quality of Life

The ultimate goal of economic development is to improve the national well-being and quality of life. To help realize this goal, eighteen living perimeters will be established in proximity to major industrial centers. The perimeters will be self-contained communities, providing living

accommodations, recreation, education, medical, and shopping facilities to residents, and will be served by rapid mass-transit networks.⁹ In addition, a national health insurance program will be inaugurated in 1994 to provide medical insurance coverage for all the people. Environmental protection legislation and administration will also be strengthened to ensure higher environmental quality and more effective ecological preservation. Within the period of years, the planning and development should improve social welfare and security, strengthen environmental protection, and greatly upgrade the quality of life in the whole Taiwan area. The per capita GNP should reach US\$14,000 by the year of 1996, putting the ROC among the ranks of developed countries.⁶

There are two principal measures for achieving this goal: ^{4,6,9,10,12,14}

1) Establishing living perimeters - The eighteen such perimeters, four of them located among the northwestern and northeastern part of Taiwan, three are around the metropolitan areas of Taipei, four in the middle, and the remaining perimeters are distributed among the south, southeast, and east, will be set up to meet the six major social needs of residents. The following measures are directly related to accomplish this goal:

A) Transportation facilities - A transportation network that provides fast and convenient intra- and inter-city transport. Every town of more than 50,000 people will be connected by highway, every city of more than 100,000 people will have an expressway system, and every metropolitan area of more than 1,000,000 people will have a rapid mass-transit system.

B) Housing - Eighty percent of housing will be owner occupied. The objective is to provide each household with its own house, and each person with his or her own room. The area for each household is to increase from 30 ping (1067.5 sq. ft.) to 34 ping (1209.8 sq. ft.). The total amount of living construction shall come to 150,000 units.

C) Cultural and educational facilities - Every township is to have a library. The facilities of each local cultural center are to be improved. Institutions for higher education and adult education are also to be augmented at all levels in the community.

D) Working environment - Employment opportunities will be created in each perimeter by improving the local industrial infrastructure. Industrial areas and commercial service centers will be established. Polluting factories will be moved to designated areas.

E) Recreational facilities.- Leisure time is to be increased to an average 45 hours a week. Every Township is to have a swimming pool and a baseball field. A playground for children is to set up for each Li (borough) of the city. And every major city is to have its own center for cultural, artistic, and folk arts performances. Museums and art galleries are to be within one hour's reach. Recreational facilities should be planned in coordination with local resources.

F) Medical network - Remote areas where medical resource are poor will be provided with regional hospitals and basic medical institutes. Medical personnel working in remote areas shall be given special allowances.

G) Shopping facilities - Large shopping centers and modern supermarkets will replace traditional markets for weekly, monthly, seasonal shopping need.

2) Strengthening environmental protection measures - Due to its relatively small size, congested traffic, overcrowded population, and extremely rapid economic development, Taiwan is confronted with serious environmental pollution problems. In order to deal with these problems, the government will adopt the following measures:

A) Garbage disposal - Erecting 21 waste incinerators with a daily disposal capacity of more than 17,000 metric tons of waste and opening 55 local and 23 regional sanitary landfill sites all over the island.

B) Industrial waste disposal - The Environmental Protection Administration will be responsible for building a pilot industrial waste incinerator with a daily capacity of 100 metric tons. The Ministry of Economic Affairs will set up industrial waste management centers in northern, central, and southern Taiwan to dispose of solid wastes from industrial parks.

C) Sewer systems - The plan calls for an extension of sewer systems so as to increase the percentage of population served by the systems from 3 percent to 14 percent by 1996.

D) Water pollution control - Comprehensive pollution management and treatment projects for 44 rivers will be implemented.

E) Air pollution control- Presently, in northern Taiwan only 84 percent of the 365 days in a given year register below a tolerable pollution count, while in eastern Taiwan, 100 percent of the days are within the limit. The plan calls for raising these percentages to 90 percent for northern and southern Taiwan, 95 percent for the central Taiwan, and 100 percent for the eastern part of Taiwan.

PLAN PROCESS

1. Progress

After the national development plan was launched, it received both praise and criticism. The plan's boldness makes some people nervous. They worry that the plan will be criticized if construction falls behind schedule or if some projects have to be put temporarily on hold. These concerns raise another common misunderstanding that the plan is an exact, inflexible blueprint for the future. In fact, the six-year plan sets guidelines and goals, and specifies projects that are needed to fulfill them.¹⁶ While the plan's

goals can be expected to remain constant, considerable adjustment can be expected in the ways to realize them. Common sense, really, though commonly overlooked. For example, it is unworkable to predict accurately the problems associated with building a high-speed railway along from Taipei to Kaohsiung city. Try adding the possible problems of total projects administered by close to thirty ministries, agencies, and local governments. Actually, due to unpredictable difficulties in acquiring adequate land, labor, and technology, various large projects are already behind schedules. At the same time, as expected, worrisome financial difficulties have also emerged for some big-ticket items. According to CEPD, of ninety-one large projects, each with a budget exceeding NT\$20 billion (US\$800 million), only fifty-five have broken ground; the other thirty-six are still in various stages of planning.¹⁴ The plan's 1992 budget was about US\$30 billion, but only 80 percent was spent. Some major infrastructure projects cannot catch up with schedule.⁶ Even all of these impacts are visible and physical facility projects, however, another "shadow" infrastructure must also be noticed and constructed, such as a complex array of trained manpower, laws, regulations, and administrative procedures.^{5,11} Taking again the high-speed railway as an example. Complicated laws and regulations are needed to govern the operations of such a train because the old ones were designed for slower-moving, steam, oil, or electric trains. They are inappropriate and inadequate for the new high-speed rail system. And new laws and regulations cannot be adopted wholesale from France, Germany, or Japan - they must be crafted to fit local requirements. Legislators, administrators, and legal experts will have a lot of work to do before the first load of passengers makes the first ninety-minute trip from Taipei to Kaohsiung.⁹

Thus, the plan must be understood in a broader perspective. It encompasses projects that predate and extend beyond its six-year time frame, it involves sophisticated fine-tuning during its regular process of review and revision,

and beside building the hardware needed for continued economic development, the plan is also forcing an extensive upgrading of the island's administrative and legal "supportware".

2. Bottlenecks

The government of Taiwan had hoped that implementing the six-year development plan would thoroughly change and upgrade Taiwan society by solidifying the island's infrastructure constructions, stimulating economic booms, and raising the quality of life on this land. Nevertheless, Taiwan's development is currently facing the struggles of being transformed and remodeled due to the high price of land and labor as well as other factors. Many traditional industries have moved off the island. The continual revaluation of Taiwan currency, the rise of regional economies worldwide and the re-emergence of trade protectionism have depleted the strength of industries primarily processing goods for export and left them unable to continue development.

Now that the plan has been under way for almost three years, the bottlenecks can be more accurately identified. Missed deadlines are plaguing many of the plan's project. What're the causes? The followings are five chief effects of them.

- 1) Land acquisition problems;
- 2) Financial imbalance;
- 3) Shortage of human resources;
- 4) Inadequate technical skills; and
- 5) Complicated coordination procedures among government agencies.

1) Land Acquisition Problems:

This effect ranks high, if not first, on the list of problems delaying construction. Land prices in many areas have tripled since early 1986

because of real estate speculation. In addition, after martial law was lifted in July 1987, people were less hesitant to take to the streets to air their dissatisfaction with government decisions.¹ At that time, a "protest culture" permeated society and oftentimes owners went to the streets to protest against the low prices offered by the government to buy their land. A buying spree in the real estate market landed a number of the plan's projects in a predicament. Under the plan, one-third of the total investment was used to buy land. The huge demand has set off a craze for land, resulting in soaring prices.³ Construction of number of projects undertaken by the Department of Transportation and Communication has stagnated because of difficulties in acquiring land. The second-phase project of the Kaohsiung Airport cannot get going because of problems in requisitioning land, and the governments concerned have no alternative but to build another airport at a different site.⁵ Matters were complicated by some government's willingness to negotiate with owners over compensation for construction on their land. One example, the compensation offered for tea-growing areas was different between Taoyuan and Hsinchu county governments on the planned route of the northern section of the second freeway. The different prices triggered disputes, after twenty months, and the expressway bureau is still trying to solve the land problems. Time has been wasted in ways like that.^{5,7}

More than schedules are being influenced by the land-acquisition problems. Costs are also sky-rocketing. Like the cost of construction on the second freeway averages NT\$1.5 billion (US\$60 million) per kilometer, compared with US\$4 million for the first freeway completed in 1978. Land costs account for 32 percent of the total budget in the second freeway, while they amounted to only 8 percent in the first one.^{1,9,12} Land acquisition is invariably a long and complex process. It usually takes at least eighteen months, and involves altering land use designations, primarily from

agricultural to residential, commercial, or industrial use, as well as getting approval from local and central governments, announcing the change of land-use to the public, and executing the actual land expropriation.

2) Financial Imbalance:

Since the plan was drafted, main debate has focused on how to finance the mammoth US\$300 billion development plan. The CEPD, which was responsible for drafting the plan, has optimistically estimated that funds will be easy to obtain. Critics, on the other hand, complain the plan is ill-conceived, too expensive, and the necessary funding will be difficult to secure.⁵ One year into the plan, the government was already facing mounting financial problems. Despite the government's bright forecast, financial problems have begun to emerge. In fiscal year 1991, the central government registered a budget deficit of NT\$257 billion (US\$10.3 billion). To cover this shortfall, the central government, in addition to appropriating NT\$22 billion from the accumulated budget reserves, floated NT\$235 billion in bond issue to cover one quarter of it, operating expenses. The Ministry of Finance (MOF) expects that bonds will become the source of the majority of funds for the plan and for the government's basic operating expenses. Outstanding government bonds topped NT\$350 billion (US\$14 billion) in fiscal 1992, making up 32 percent of the central government's total budget. The figure is expected to reach 142 percent in fiscal 1996. In fiscal 1992, 5.2% of the government's expenditures went to the payment of principal and interest on bond issues, and that figure would reach 30 percent or more by 1999. The MOF warns that a major financial crisis is looming, threatening to bankrupt the nation and leave a formidable financial burden for further generation.^{4,6,9,12}

Due to budget inaccuracies for the plan, construction funds have gradually become a heavy burden on both the Taiwan authorities and the public. The

plan needs a total investment of NT\$8.2 trillion, of which only NT\$2.0 trillion is to be supplied by the ordinary budget. The remaining NT\$6.2 trillion is to come from an inadequately funded special budget.² Funds have to be raised by issuing public bonds and through land transfer. The total investment for the six-year plan is likely to be NT\$11 trillion. The investment required for over one quarter of the projects was initially underestimated, and expenses will continue to increase in the future. For example, the budget for the construction of the high-speed railway project, which has not yet begun, has grown from its original NT\$300 billion to over NT\$430 billion. The shortage of these funds can be solved only through the issuance of public bonds, and the huge debts will bring tremendous pressure on the authorities and the public.^{5,9}

Private investment has also seriously lagged behind government projections, creating other bottleneck for further development. But, the sale of government's properties may be achieved according to the schedule.¹¹ The government will pocket an estimated NT\$600 billion (US\$24 billion) from the first phase of the privatization program of twenty-two government-run enterprise.¹⁴ However, it will be actually take much longer than expected to obtain the funds.

3) Shortage of Human Resources:

The shortage of labor manpower and experienced professional also directly affect the implementation of the development plan. Statistics show that Taiwan needs an additional 120,000 ordinary laborers, and that the shortage of engineers is rated at 63 percent.⁵ It is another reason why projects are falling behind schedule. Even the pressure was slightly relieved in April 1992 after the government lifted the ban on foreign labor, the expressway bureau, for instance, has imported 1,800 foreign workers, primarily from Thailand, Philippines, and Indonesia.^{5,11} But the construction companies

still cannot hire enough laborers. However, the shortage of unskilled labor is only part of the problem. The need for experienced engineers gets more acute following the launching of each new project. One major reason for the shortfall is that after all the Ten Major Construction Projects were finished in the late 1970s, the government didn't undertake many large-scale public works. Experienced engineers either retired or changed jobs to something more profitable and less strenuous, like investing in the stock market.^{8,9} Meanwhile, according to the Construction Industry Foundation for Research and Development, the net value of construction industry will jump to NT\$680 billion (US\$27 billion) from the current NT\$180 billion (US\$7.2 billion) in six years.^{10,11} As a result, private sector engineering company are offering top dollars to attract engineers, including those already working on six-year plan projects with other firms.⁵ Turnover is high in the market and a common occurrence that construction companies undermine each other's business by scrambling for experienced people. On the other side, the construction sites are full of recent college graduates, but they cannot take immediate action when problems arise. They always have to ask for instructions, which really wastes time.

4) Inadequate Technical Skills:

Many of the plan's projects, such as Taipei's MRT and the high-speed railway between Taipei and Kaohsiung, require cutting-edge high technology. It is hoped that through the construction of these projects, new technology can be transferred to help develop related industries in Taiwan. One goal for local business is to develop the expertise necessary to handle long-term maintenance of these systems.^{9,10,14} There is substantial money to be made. In the case of high-speed railway, the costs for five years of maintenance are expected to be roughly equivalent to one year of construction costs.⁹ If we can produce some of the component parts

ourselves, lots of money can be saved. In addition, we can eventually export this technology to mainland China and Southeast Asia.

In the past, the task of developing means for technology transfer has received relatively low priority. For example, three nuclear plants were built on the island by the mid-1980s, but the construction of the fourth plant, a major project in the six-year plan, will still primarily count on the foreign technology. It's because the three plants were all turn-key projects.^{9,15} Currently some observers complain that government officials are still reluctant to address technology transfer issues because of their great complexity. But this attitude is being challenged in both the public and private sectors. At present, the Technology Cooperation Regulation governs technology transfers, but since the regulation was promulgated in 1962 and mostly recently revised in 1964, it suffers from being outdated and too vague for today's high-tech environment.⁵

5. Complicated Coordination Among Governmental Agencies:

A lot of the six-year plan projects require the corporation of various government agencies. Breakdowns in communication between different levels of government and agency can complicate matters. In the course of implementing the plan, one of the biggest resistances came from the pass-the-buck attitude and low administrative efficiency of various departments.^{9,14} The six-year plan was first put forward by various departments on the basis of their local conditions. Since the plan was not based on the consideration of the overall situation, conflicts often occurred among the various agencies during their implementation of the plan. Two projects which well illustrate this are the construction of high-speed railway and the development of new cities.^{5,11}

Contractors are also overwhelmed by the number of offices they must deal with during their work. "We don't have ability to handle so many

government agencies," says a major contractor within the plan. "We hope our clients can solve all related problems and just let us do the construction work". Waste soil disposal is an example. "We think our client should coordinate with the Environmental Protection Administration first, then tell us where we can dump the waste soil".^{3,9,7,10} The complaint hits a sore spot. Another contractors working on the huge tunneling projects that are part of the Taipei MRT have had tough time finding places to dump the tons and tons of soil excavate each day.^{5,7} Usually the government requires the companies to solve their own dumping problems. Because there is no large dumping area in urban areas, construction companies have to send truckloads of soil to distant districts. It is estimated that from 1993 to 1995, between 3 million to 3.5 million cubic meters of waste soil will be dumped annually.^{9,7,14} Originally, the MRT authority received permission from the Department of Public Works and Taipei county government, to dump 3.6 million cubic meters of dirt at the coast near the suburb Linkou, reclaiming 60 hectares of land.^{4,9} But when application was made to change the land-use designation, an entertainment company complained that the county's Department of Education had already given it permission to open up a recreational beach in the same area and they protested against the dumping.^{4,5,7} The case is not yet resolved, and will involve decision made by the Ministry of the Interior. Although several dump sites plan have been studied, waste soil problems is continuing.⁹

POLICY REVISING

1. Cause and Effect

Except for those obstructions mentioned above, the six-year plan has also

triggered the problems unexpected by the government, such as a drop in private investment and a sharp price rise. The plan was originally aimed at boosting non-governmental investment by encouraging the participation of the public's funds. In fact, however, the amount of investment from the islanders is decreasing, because most projects within this plan, particular the transportation constructions, require large amounts of investment, big risks, slow recovery of investment and the limited access for general public to participate. Since the plan's attempt to bring in a large amount of funds from the people is not supported by relevant decrees, the public naturally hesitates to give it an enthusiastic response. Because funds are not in place, the government can only rely on issuing of public bonds to raise funds. Fund-collecting measures such as issuing government bonds, raising interest rates and increasing taxes have, as a consequence, stimulated continual price hikes and substantial rises in production costs. During the first five months of 1993, the average growth rate of the island's price index was 5.08 percent, far ahead of the 3.5 percent growth rate, estimated by Taiwan authority in the six-year plan.^{9,11}

Meanwhile, one main purpose of the plan is to sustain an annual GNP growth of about 7%, but growth slipped to 6.1% in 1992 and the government is forecasting, probably optimistically, 6.2% a year on average up to 1996.^{12,13} Taiwan's major export markets are in countries in recession. A lot of local business is moving to China and Southeast Asia. Tax collection is becoming stagnant and inflation is a big worry. On top of all this, some of the corruption scandals involving members of government are tied to infrastructure projects, many of which are behind schedule. Government authorities eventually concede that the original plan is a rough program mixed with unfeasible ambitions, over-estimated budgets, and inefficient administrations.

On July 1, 1993, the Taiwan's Cabinet approved a three-year (1993-1996) stimulus package designed to spur growth by helping the private sector through low-cost loans and other measures. Two weeks later, the government's chief planner announced a long-expected midcourse reduction in the nation's massive six-year development plan. The two moves mark the influence of new Premier Lien, who wants to scale back the huge and expensive six-year plan, and to upgrade Taiwan's infrastructure and propel it into the ranks of developed nations in a more pragmatic and efficient way.

2. Economic Stimulus Package

How to cut tremendous budgetary spending without threatening economic growth, which is already sluggish by Taiwan's recent standards? The answer that Taiwan government confides in, is to get the private sector to take up the slack. To do so, the stimulus package includes the following main points:^{10,11,15,16}

- 1) NT\$40 billion (US\$1.5 billion) in loans to small- and medium-sized businesses;
- 2) NT\$20 billion for high-technology enterprises;
- 3) Nearly 30,000 hectares of government-owned land will be released for private enterprise;
- 4) A five-year tax holiday offered to certain hi-tech industries;
- 5) More foreign workers will be allowed into the country to help relieve a labor shortage in construction and manufacturing; and
- 6) broadening the list of semi-finished industrial goods which may be imported from mainland China for processing in Taiwan.

The new package does not intend a sharp near-term increase in growth, but aims instead to keep the expansion in GNP and private investment from falling below present annual levels of 6-7% and 10-15%, respectively. Even

Taiwan's Central Bank is said to oppose the loans, but in an outright showdown the government would probably prevail. Its three-year time frame coincides with Premier Lien's presumed term of office and with President Lee's own tenure. Politics is no minor factor here because the ruling party - Kuomintang (Nationalist) faced a party congress in August and local elections later in year of 1993. It is eager to show that it is doing something to help the private sector, particularly small businesses. However, critics says the blueprint, like previous planning policies, is generally long on guidelines, goals and objectives but short on specific projects. The government's plans are still unrefined at the industrial level, and many manufacturing companies are reluctant to work with its programs.¹¹ Large private-sector companies plan several years in advance, but government policies, which are often vague and unpredictable to begin with, can easily go astray during implementation. Besides, the amount of funding they are offering can't make a dent in what the private sector really needs. Other businesses say most of the plan will benefit big corporations, not the 95% of manufacturing companies which are small-and medium-sized. They complained that the Cabinet is doing nothing about what they regard as a larger hindrance to growth - the Central Bank's anti-inflation policy of high interest rates and tight liquidity.^{11,16}

But economists believe that the new strategy is significant less as a conventional stimulus package than as a fundamental shift in emphasis towards the private sector, which the government wants to be more deeply involved in the six-year development plan. Taiwanese companies are investing in infrastructure projects in Vietnam, the Philippine and China, so why not at home?^{11,14,15} If government could encourage the private sector to get involved in public projects instead of state-run enterprises, we'd get better efficiency and less corruption. That is what the government intends.

This time the whole economic package focuses on how to encourage the private sector to invest.

3. Adjusted Development Plan

Almost at the same time, the six-year national development plan is, actually, being modified overall for the first time since it was adopted with great fanfare in 1991 (and it should run to June 1996). The planned reductions will slash the total cost by 22% from NT\$8.2 trillion to NT\$6.3 trillion (US\$242 billion) and reduce the number of projects to 632 from 775. Time schedule of the plan is also changed to take at least 12 years to complete, instead of six years.^{13,15,16} It is not very clear, however, exactly where the axe will fall. The chief government planner said the CEPD, which renewed this draft of the plan, will make a more specific framework in the near future. The cuts would come in secondary projects, sparing the major items, such as, presumably, a high-speed railway planned for the island's west coast. Even some of the cuts are on paper, since the original plan was deliberately inflated for impact, but the program is shrinking in reality as well as in theory.

The government believes the cuts will bring the original development plan into line with the reality - meaning fiscal restraints and public resistance, because the new Legislature, elected in December 1992, is increasingly opposed to the enormous borrowings the plan has already required, and there are growing doubts that the program is being administered either honestly or efficiently. Indeed, the program has been persistent all along by an intense national debate over whether it is either feasible or affordable. There were fears that it would cause highly inflationary as well as other social impacts. Today many insist the government has borrowed too much for the plan; outstanding issues of government bonds have quadrupled since 1990 to NT\$550 billion (US\$21 billion) in 1993, and is crowding out

private borrowers.^{5,9,13} The Ministry of Finance also warns that issuing too many government bonds could hurt the financial stability and threaten to bankrupt the nation.¹⁴

One of the major reasons the six-year plan was launched in the first place out of fear that the economy faced a serious slowdown - economic growth had slowed to 5.2% in 1990, and hundreds of manufacturers were abandoning the island for lower-cost China and Southeast Asia. Private investment was contracting with those developing countries. Some policy advisers called for an unprecedented level of deficit spending to close the gap in infrastructure investment and spur growth. But circumstances have changed. While almost a full percentage point below government forecasts, economic growth exceeded 6% in 1993 and during the first quarter of 1994.¹⁷ The CEPD expects the plan to boost growth to 6.7% from 6.3%. Private-sector investment grew 18% last year.¹⁶ These trends explain the necessity of adjustment and re-evaluation of the initial development plan.

ANALYSIS OF IMPLEMENTING APPROACH

The goal of the six-year plan is, theoretically, to provide the clear incentives and functional programs to achieve the overall upgrade of Taiwan's society at the national level while dealing with economic problems and the different points of view from various participants in the course of implementation. From the view of the planning process, the many difficulties facing Taiwan's project implementation are simply caused by the hasty drafting of the plan. Such a gigantic plan was made up in just six month's time as if it were done under the urge of law, in response to the government's blueprint

requirements, or the competition of comparing respective strengths among various levels of governments, each devising plans including more projects and greater sums of money than each other. Hasty planning for quick results and interdepartmental rivalry have resulted in an unrealistic plan. Blindness is evident in the planning decisions and it needs to be examined.

The approach utilized by Taiwan's government to initiate the objectives and to implement the policies of the plan can be approximately described as a blend of top-down and incremental perspective. Taiwan officially constitutes the national development plan through a central planning bureau - CEPD, but the local government's economic and planning systems - from provincial to municipal agencies - are composed of autonomous, self-governing working organizations.⁵

1. Positive Effects

On the bright side, this approach can facilitate the institutional condition of some particular policies or projects within this specific implementation structure. Even they may involve various public and private agencies on all levels of the intergovernmental system. Choosing the combined perspective reflects Taiwan authority's belief in the importance of initiating guidelines for projects, the interest in political effectiveness of administrative organizations and the decision-making procedures it established. Several key characteristics of this approach used to implement planned policy can be principally stated as following:

- 1) Implementation here represents putting policy or project into effect through a process of interaction between the setting of goals and actions geared to achieving them;
- 2) The progress of implementation has the ability to forge subsequent links in the causal chain, mainly with coordination and managing various elements, to obtain the desired results;

3) Whereas implementation for the plan begins with a set policy and projects, the policy formation process starts with a review of previous governmental efforts at political, socioeconomic and community development and events leading up to the adoption of the plan; and,

4) In accord with the principle of incremental planning, it assumes that once the plan is officially adopted, the adaptation and modification of enacted policies, objectives, and projects can have an easy access to the local-level environments when considerable impacts or changes occurred during implementation process.

The approach, therefore, is easily to be maintained for a long-term period because it is concerned with the initial policy, the enactment process of the original program, and subsequent changes during implementation at both the national and local levels, while the program was substantially altered. Also, it is generally consistent with Barrette and Fudge's view that "rather than treating implementation as the transmission of policy into a series of consequent actions, the policy action relationship needs to be regarded as a process of interaction and negotiation, taking place over time, between those seeking to put policy into effect and those upon whom action depends.", which taking "what is done" as the central perspective, then focusing on the actions (such as, responses to environmental pressures; or to pressure from other agencies) seeking to influence or control the groups or individuals, and seeks to examine the degree to which action relates to policy implementation.¹⁸

2. Implementation Deviation

But, unfortunately, the approach, practiced by Taiwan's government, departs in several ways from their original concepts and consistencies, in particular, from the distinctions between policy formation, the enactment and funding of projects as well as its practical implementation process. The

following effects explain the deviation of the blend approach which occurred in the course of policy implementation:

1) The official planning attitude toward central control and management is still severs as a centerpiece within the combined method, and the incremental executive system provides only limited access for local level agencies. Consequently, the unbalanced planning progress reduces the effectiveness of administrative organizations, and increases the degree of complexity to implement the policies or projects of the plan.

2) The failure to make a proper in detail assessment of the plan's needs before stepping into the official enacting process and unfeasible budgeting have made policies are not practical to translate into implementation and led to the repeated revisions of projects.

3) Different plans of local governments are constructed by a mixture of individual experience, rules of thumb, various skills and some specific public interests. The common philosophy and scheme about planning is basically not existing on all levels. The situation makes the accomplishment to integrate a comprehensive national development plan becomes more complicated.

4) The lack of efficient feedback and responsibility systems has resulted in the low sensitivity of evaluation, high consumption of resources and the weakening of the plan's action potential to engage in further national development. Any new information or news about the policy being converted into actual public investment, once released, will trigger a series of responses, such as a real estate buying spree, as well as other impacts, which may mark a beginning of bankruptcy of the plan.

5) Departments of the central government concerned generally request few opinions of the local agencies or landowners before they want to start the nation-level plan in their advance schedules. The monopoly by the authority not only generated obstacles to the implementation of the plan, but caused

disputes over responsibilities and rights. The lack of close coordination between various levels of governments is the main reason for the failure to eliminate the bad habit of everyone doing things in his own way, which will adversely affect the progress and efficiency of the entire plan.

RECOMMENDATIONS

As a planning student, it is beneficial and essential lesson for me learning to look at the implementation process of the national development plan not solely in terms of putting policies and projects into effect, as well as of observing what actually happens or gets done and seeking to understand how and why, but also in term of trying to provide some potential suggestions for the problems. The very size of the plan and the number of the projects submitted for inclusion in it, made it necessary to set priorities of development, to remove or alleviate the implementation bottlenecks, and rebuild the government's administrative systems. After these efforts, we may hope the implementation results of this national development plan can be basically improved and truly complete the upgrade of Taiwan's society and public welfare at the same time. The following suggestions or strategies are developed for the study both from the actual situations and theoretical assessments. The major items include:

1) Land Acquisition:

Knowing the serious impacts of land-acquisition disputes in the six year plan is not a difficulty thing, but, what's the solution? It caused much complex discussion in the whole country. Some analysts argue that disputes

will not end until Taiwan addresses a larger underlying problem: rampant land-price speculation. The land -acquisition issue stems from land prices.¹⁶ Nearly everyone, from landowners to urban planners to government officials, advocates that the government have to offer a fair market price instead of the traditional "published land value", which usually can not reflect the proper land value, However, why has the government been reluctant to do so? The main reasons are that it would further strain the budget, and that it is very difficult to determine accurate market values. In addition. the government would lose a long-held right. Despite these obstacles, the government should admit that market prices are already used when expropriating land for industrial development projects. Under the 1991 Statute for Upgrading Industry, the government must pay land prices that are consistent with the general purchase and sale price. Therefore, such a policy could be expanded in conjunction with revisions to the land-value increment tax now being discussed.^{15,16}

A new approach that revising land-acquisition law can provide an innovative regulation that would establish a channel that landowners can use to appeal land prices. Under this suggestion, people could take disputes to an administrative court. The law must first be approved by the executive and legislative branches, a process both public and private sides can expect taking less than two years, to solve land disputes and it allows the government to begin work before compensation is paid, so that progress on projects will not be held up during negotiations.

We also can recommend that government increase their use of other incentives for landowners, such as forming joint ventures, or returning a portion of the land to them after the development is complete. These incentives are already available with some six-year plan projects, but not all.⁹ For example, joint land development has provided one way to break up the logjam in many instances. The Department of Rapid Transit Systems

was the first to adopt this method, which emphasize the cooperation between the government and private sectors. Landowners can be developers or investors, and are responsible for the joint development plans which should be submitted to the local government for approval. The best benefit of this proposal is that the government gets the land without paying huge amounts of money for land expropriation, and the landowners keep the land as well as make money on it. To sum up, the most important function of this kind of joint development plan is to reduce time spending, and to let the public get efficient facilities as soon as possible.

After all, simply paying more and more money in land acquisition fees is not a viable solution if the plan's projects want to stay on schedule and within their budgets. Because even a dispute can be settled by increasing compensation, but if the government doesn't have enough money, the project will be stalled again. It is reasonable to say that, according to the report of the Public Constructor Supervisory Board, if the land problems are solved, most projects can be carried out smoothly.^{11,15,16,}

2) Human Resources:

In face of the concerns of shortage of labor force and skilled professionals, experts in government and the private sector are suggesting that new projects be released for bid at a slower pace and hope the government will establish a more detailed time-table for the whole plan, and set priorities for all projects because of the limited human resources.^{15,16} Meanwhile, the government also should realize that public construction is, by its nature, a long-term and ongoing effort. While the plan will complete a number of major construction projects, the work will have to continue into the future. Experienced technical personnel and laborers will therefore be used in carrying out new projects in later years. In addition, the availability of experienced technical personnel will not only heighten the quality of

domestic engineering work, but also strengthen the nation's capability in bidding for overseas construction projects, thereby promoting the internationalization of the Taiwan's construction industry.

3) Fiscal Reflections:

Over the past forty years, the island's infrastructure lagged far behind the economic development, and the six-year plan aims to fill the gap. However, this kind of remedy may be too ambitious and could end up stabilizing the economy. Fortunately, the government appears to have detected the problems. The plan has been revised not to be completed in the six-years period, which may be the only way to solve the financial and budgetary problems asserted by most of the local people. Despite the widespread doubts about the nation's financial ability to handle the plan, however, the money is not the most serious problem, but the government's ability is the concern. In fiscal 1993, for instance, of the NT\$668 billion (US\$26.7 billion) budgeted for the plan, only 80 percent had actually been utilized. At the same time, the other main reasons also effect the plan for falling behind schedule, allocating budgetary funds as well. As a result, it appears inevitable that the execution of the plan will be exceed six years.

4) Technology Transfer:

When facing the situation of outmoded and vague technology regulations which still govern technology transfers, the government and private sectors need to reach a consensus on proceeding, then work together to make it happen. Until the regulations are updated, we can specify more new and proper procedures for technology transfers in the contracts. But first, to understand the extent of our ability and what we really need to learn is important factors for us to upgrade the overall technological skills. Meanwhile, on the supply side, we also have to consider what the

technology superiors can teach us. Moreover, the obstructions, which may cause advanced foreign companies to hesitate to transfer their technology because they don't want to us become their competitors, should be eliminated. After all, building a partnership between local companies and foreign consultants is a feasible solution.

5) Intergovernmental Cooperation: The solution for the coordination problems among various levels of government is one of the major works that the central government should currently take responsibility and finish it. The better way is to set up a national level organization, like the "public construction supervisory board" with high rank official as the chairman. The primary functions of this board will be to supervise the quality, techniques, and schedules of all national major public works, which originated in different agencies related to the works. In the traditional pattern, all the departments are doing their own projects, and the communication with one another is rare, but right now, the board is responsible for arrangement and coordination among various departments to set up timetables to release the projects. Furthermore, after the board becomes more mature in every respect, it can be expanded to be the official Council responding the overall national planning.

6) Institutional Improvement:

Since the economic stimulus package and adjusted development plan were launched last year, it's clear that the government has changed its tack and wants the capital of the private sector into public projects. The offering of rent rate and tax incentive provide the more flexible way to encourage their participation in the plan. But there still are bureaucratic obstacles to such investment. Furthermore, Taiwanese entrepreneurs, accustomed to quick returns, are reluctant to invest in financially dubious ventures at home when

the rewards across the ocean are better. Therefore, only through the totally political reformation and continuous administrative innovation, can the Taiwan's government prove to its people that the future national development is the stable, progress, and prosperous Broadway when the promised improvement in their quality of life becomes a fact.

CONCLUSION

Although the six year national development plan is concerned with the economic growth, it also places great emphasis on balanced regional development and the expansion of both infrastructure hardware and software needed to upgrade the overall quality of life of Taiwan's citizens. Through this plan, with special attention given to industrial and commercial facilities as well as cultural and social activities, Taiwan's government can hope to rebuild social and economic order and promote more evenly balanced development to achieve the western developed nation status. When it is accomplished, the people on the island will enjoy a life much richer in culture and material goods.

Even if major bottlenecks happen in the course of implementing the plan, it would be inaccurate and impractical to assume that if these problems were all solved tomorrow everything could be kept on schedule exactly. In fact, some much larger complications have continued to emerge in the implementation process. It is becoming clear that Taiwan is actually in the midst of transforming two kind of infrastructures - physical constructions and governmental systems - at the same time. Several powerful mechanisms and innovative stratagems for reexamination, adjustment and evaluation are now in place, an effective reform that has great potential to put the plan into

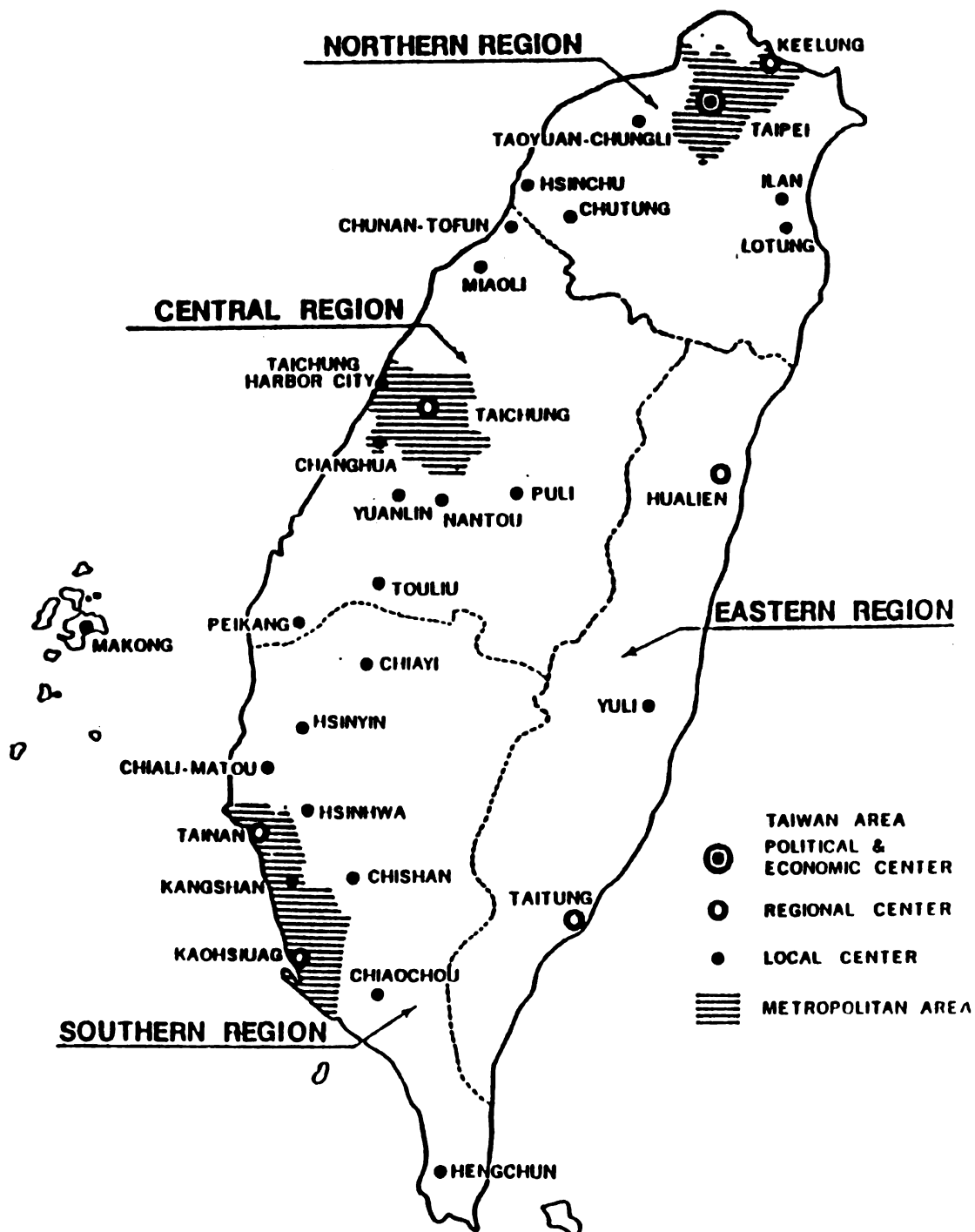
a wholly different perspective. As the national development plan is fine-tuned in the months and years ahead, the setting of clear priorities shall help ensure that Taiwan will enter the twenty-first century with an overall infrastructure that meets the economic, social, and culture needs of its people.

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Figure 1. URBAN HIERARCHY



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