



GOVERNMENT OF THAILAND

**THE FOURTH NATIONAL ECONOMIC AND SOCIAL
DEVELOPMENT PLAN (1977-1981)**

**NATIONAL ECONOMIC AND SOCIAL DEVELOPMENT BOARD
OFFICE OF THE PRIME MINISTER
BANGKOK, THAILAND**

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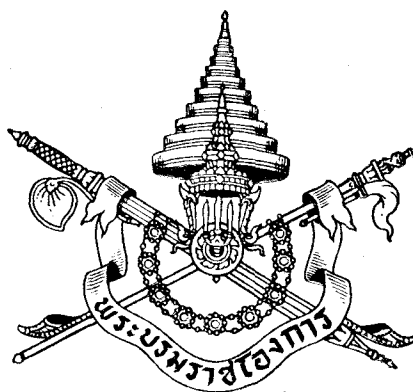
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Royal Command Announcement

**Subject : The Fourth National Economic and Social Development Plan
(B.E. 2520–2524)**

(M.R.) Bhumibol Adulyadej

His Majesty King Bhumibol Adulyadej has Commanded that:

Whereas the National Economic and Social Development Board has established the principal development objectives, targets, and strategies in the Fourth National Economic and Social Development Plan (B.E. 2520–2524) as the national framework for economic and social development policies which have already been approved by the Cabinet. The main contents of the Plan are annexed to this announcement.

Be it, therefore, proclaimed that the Fourth National Economic and Social Development Plan (B.E. 2520–2524) shall become into force as of the 1st, October B.E. 2519 and shall remain effective until the 30th September B.E. 2524.

Given on the 1st, March B.E. 2520, being the 32nd year of the present reign.

Countersigned by :

(Thanin Kraivichian)
Prime Minister

PART ONE
OVERVIEW OF THE PLAN

CHAPTER I

NEW ECONOMIC AND SOCIAL ORDER OF THE PLAN

In the recent past, Thailand has experienced a series of crises and subsequent periods of adjustment. The socio-politico-economic transitions in this country during the past three years have forced the Government to adopt a new set of development positions and priorities for the Fourth Plan. Several basic policy reforms are considered necessary for promoting greater economic security for the nation and creating a more equitable economic and social order which would mean an eventual eradication of poverty among a large segment of our population.

In order to achieve this new socio-economic objective, the Government must intensify its own efforts, accept more responsibility and give full commitment to the basic policy recommendations outlined in the Fourth Plan. Secondly, the Government must act in several key sectors to promote more social justice and ensure that the benefits of development are shared out more equitably. These things must be done to make this forward-looking Plan a success.

The Fourth Plan is basically a national policy framework which policy-makers and related government agencies can use as a reference in formulating and revising specific development policies, programmes and projects. This framework provides direction and should help coordinate efforts aimed at developing new approaches to solve the basic problems which confront the nation.

In implementing the Fourth Plan, the Government will ensure that the required resources are mobilised and allocated as stipulated in the Plan. This requires whole-hearted effort, dedication, discipline and self-reliance from all concerned.

The key development issues, the major problems and the recommended development strategies are all discussed in detail in this Plan, as well as the main implications of the envisaged socio-economic transformation for national security. Instead of emphasizing just "economic growth", the Fourth Plan stresses rather heavily the importance of promoting social justice by reducing socio-economic disparities and improving mass welfare. Though the Fourth Plan emphasizes the importance of achieving a fast economic recovery during the first phase of the Plan period, especially in 1977 and in 1978, there is a shift in emphasis from growth rate to growth pattern in the later phase of the Plan which is more consistent with the aims of correcting the more basic structural problems of our society.

In addition, the Fourth Plan calls for an intensification of efforts by the Government in a number of areas which are considered as preconditions for effective implementation of various key development policies and programmes. These include a better coordination of key economic policies which require a closer link between national planning, budgeting, the management of the civil service and the improve-

ment of project preparation and implementation capabilities of the key operating agencies during the coming five years. Other policy and procedural reforms are also required.

The Fourth National Economic and Social Development Plan is the result of careful analysis of national problems and development issues and incorporates the constructive recommendations and views of experts from both public and private sectors gathered during the Plan preparation period. Since planning is a continuing process, further adjustments of certain programmes and projects through the annual planning and budgeting process may be necessary with changes in circumstances and the key development parameters.

CHAPTER II

EVALUATION OF THE THIRD PLAN: A SUMMARY (1972-1976)

1. Summary of Development Performance and Major Development Programmes and Projects

During the past 15 years of planned development under the first three Plans (1961-1976), the Government mobilised approximately U.S. \$ 15,000 million from both foreign and domestic sources to finance various public development programmes and projects which have strengthened the country's economic and social structure. The creation of infrastructural facilities has been necessary for the expansion of national production and for providing additional basic services to the people. At the same time, several reorganizations of the public development administration were made and some of the major government institutions were strengthened. This was essential for accelerating national development. In addition, during the Third Plan period, development policies were formulated and a number of projects were implemented for tackling the country's long-term economic and social problems. Such development policies and projects extend into the Fourth Plan and Government support for these policies and projects is therefore needed.

The evaluation of development performance during the First and Second Plans (1961-1971) revealed that the public development strategy in giving investment priority to the provision of basic economic and social infrastructural services such as the construction of highways, irrigation facilities and power systems has contributed significantly to the increase in the high growth rate of production at an average rate of about 7 per cent per annum during 1961-1971.

Although the overall growth rate was satisfactory the nature of growth led to further income disparities among various income groups and regions of the country. This income disparity can be partly explained by the fact that the past development strategy, emphasizing economic efficiency and overall growth rate of income and production, neglected the distribution of the benefits of growth to the majority of the population. Those who have had access to the economic and social infrastructural facilities that were provided by the Government gained the most, while those in remote areas which have received little attention from the Government because the national efficiency criteria ruled out such public investments lost out.

Subsequently, in formulating national development policies for the Third Economic and Social Development Plan (1972-1976), emphasis was given not only to the improvement of economic structure and the maintenance of economic stability through increased production, but also to alleviating problems related to the widening income gap and inequitable distribution of social services. Hence, the Third Plan development strategies included explicit policy measures on income distribution and attached greater emphasis on social development. The main additional strategies of the Third Plan in this respect include the following:-

(1) Reduction of Population Growth Rate

In order to adequately meet the demand for basic services and to alleviate the economic burden of poor families in future, envisaged population growth rate has to be reduced in accordance with the planned target.

(2) Distribution of Economic and Social Services

Economic and social services have to be distributed more evenly to reach people living in remote areas in order to improve their living conditions.

(3) Creation of Opportunity for the People

This is aimed at the development of the people's capabilities in utilizing economic and social services provided by the Government so that the people in the rural and remote areas can produce and respond more positively to the economic opportunities.

The performance evaluation of the Third Plan can be summarized as follows:

1.1 National Economic Stability

The Thai economy during the Third Plan has become more open as witnessed by the increase proportion of the value of international trade in the Gross Domestic Product from 34 per cent in 1971 to 48 per cent at the end of the Third Plan. This has made it more sensitive to the changing world economic situation.

During the Third Plan period, the world economy was characterised by instability of the international monetary system since 1971, during which the U.S. dollar was devalued twice, sharp rise in world prices of major commodities, particularly food items and raw material inputs since 1973 and the quadrupling increase of crude oil prices during the first three years of the Plan. This situation brought about inflation and recession in developed countries resulting in a decrease in world trade and high level of unemployment in many industrialized economies.

These changes in the world economic behaviors have greatly affected Thailand's economic stability as clearly indicated by the increase in the domestic price level at an average rate of 12.5 per cent per annum during the first four years of the Plan as compared with an increase of 3 per cent per annum during the Second Plan period. This sharp rise in the price level was mainly attributable to the increase in export and import prices. Meanwhile, the worldwide economic recession was mainly responsible for the stagnation of domestic investment. The total fixed capital formation at constant prices increased at an average rate of 5.2 per cent per annum during the first four years of the Plan which is low in comparison with the average rate of 9.5 per cent during the Second Plan. This decline in investment accentuated the problem of unemployment particularly in industrial and services sectors and among high level manpower. In addition, the growth rate of output which used to increase at a high and sustained rate began to decline and fluctuate violently in each year according to world economic conditions and the resulting changes in domestic investment, consumption, export and the Government expenditures.

Table 2.1

Major Indicators of Economic Stability during the Third Plan
(Constant 1962 prices; annual percentage changes)

	1972	1973	1974	1975	Average 1972-1975
^{1/} Price Level	4.9	15.7	24.3	5.3	12.5
Gross Domestic Product	4.3	10.3	4.6	5.5	6.2
Fixed Capital Formation	-0.2	5.1	6.9	9.3	5.2

^{1/} Consumer Price Index.

1.2 Lower Rate of Production and Income Growth than the Plan Target

During the Third Plan period, the Gross Domestic Product in real terms grew by 6.2 per cent per annum from 129,617 million baht in 1971 to 174,866 million baht in 1976, which fell short of the 7 per cent target that was set for the Third Plan. The per capita income increased at a rate of about 3.3 per cent per annum which is lower than 4.5 per cent Plan target. Production in the agricultural sector was also lower than the Plan's target. Meanwhile, the growth rate of industrial production and exports were slightly more than the Plan's targets. At the same time, the growth rate of imports increased substantially as compared with the envisaged target.

Table 2.2

**Actual Economic Performance as Compared with
the Third Plan Targets**

	Third Plan Target	Actual Rate of Growth During ^{1/} the Third Plan (1972-76)
(1) Gross Domestic Product	7.0	6.2
(2) Per Capita Income	4.5	3.3
(3) Agricultural Production	5.1	3.9
(4) Manufacturing Production	8.0	8.6
(5) Exports	7.0	14.0
(6) Imports	2.8	11.5

^{1/} NESDB Estimation for 1975-76

The shortfall in achieving the Plan's target of growth in the agricultural sector is attributable mainly to the late arrival of the rainy season in 1972 and 1976 which limited output expansion in the agricultural sector and led to the slowdown in the overall rate of growth. Moreover, changes in the world economic situation since 1971 and the resulting problems of domestic inflation and recession had also brought the rate of growth down to only 4.6 per cent in 1974 and thus lowered the average rate of growth throughout the Plan period.

The manufacturing sector expanded at an average rate 8.6 per cent during the plan period, slightly exceeding the Plan's target. However, this rate of increase is still slow as compared with the rate of 11.4 per cent increase during the Second Plan. Most of industrial output expansion occurred during the first three years of the Plan (1972-1974) when favourable demand existed in international markets. During this period the volume of several industrial exports increased. The most significant was registered by sugar in which the volume of exports increased fivefold. Substantial increase in output was also witnessed in other small export industries such as pineapple canning, the manufacture of iron and steel products, the making of wooden household utensils and the assembly of electronic products. The export of these products increased from 330 million baht in 1970 to 2,510 million baht in 1974.

Since mid-1974, however, the manufacturing sector has been hit hard by the worldwide recession. This slowdown was brought about by a combination of the shortage of some imported raw materials, cost inflation from rising import prices and a drop in domestic and external demand which in turn discouraged domestic investments. Hence, during 1974-1976, the manufacturing sector expanded by only 6.2 per cent per annum.

1.3 The Reduction of Population Growth Rate and Provision of Economic and Social Services.

Major targets were set in the Third Plan for the reduction of population growth and distribution of economic and social services in-order to narrow inter-regional income disparities and between urban and rural areas. The Third Plan's performance relating to these targets can be summarized as follows:-

1.3.1 Reduction of Population Growth

A family planning was undertaken on an experimental basis in 1965. In 1973 the Government formally adopted a population policy to reduce the population growth rate and launched a national family planning programme. A goal of increasing family planning services to 1.98 million acceptors during 1972-1976 was subsequently announced in the Third Plan.

Progress was made in the implementation of the family planning programme during 1972-1975. By 1975, family planning services had already covered 1.91 million of new acceptors as compared with the target of 1.98 million new acceptors during 1972-1976. During the first four years of the Plan approximately 97 per cent of the target had thus been already achieved.

Table 2.3
Reduction of Population Growth and Provision of
Economic and Social Services

Major Development Activities	Plan Target	Actual Achievements
(1) Reduction of Population		
1.1 Reduction of Population Growth Rate in 1976	2.5%	2.6%
1.2 Number of Family Planning Acceptors	1.975 million	1.908 million ^{1/}
(2) Provision of Economic and Social Infrastructure		
2.1 Economic Services		
2.1.1 Irrigable Area	17.67 million rai	20.07 million rai ^{2/}
2.1.2 Ditches and Dikes in Irrigable Area	4.47 million rai	7.60 million rai ^{2/}
2.1.3 Land Consolidation	100,000 rai	53,100 rai
2.1.4 Feeder Roads and Rural Road	7,500 k.m.	7,282 k.m. ^{3/}
2.2 Public Utilities		
2.2.1 Provision of Water Supply	20,000 villages	9,935 villages
2.2.2 Increase production capacity of Provincial Water Supply	660,000 m ³ /day	624,040m ³ /day ^{4/}
2.2.3 Power Installed capacity	2,469 Megawatts	42,38 Megawatts
2.3 Social Services		
2.3.1 Number of Students	8.880 million	8.089 million ^{3/}
2.3.2 Doctor/Population	1:5,806	1:6,750
2.3.3 Nurse/Population	1:1,775	1:1,430
2.3.4 Hospital bed/Population	1:1,340	1:640

^{1/} 1972-1974

^{2/} 1902-1975

^{3/} 1972-1975

^{4/} 1972-April 1,1976

Table 2.4
Family Planning Programme
(Number of New Acceptors)

Thousands

Method	1965 - 71	1972	1973	1974	1975	1972 - 75 Actual	1972-1976 Third Plan Target	% of Target Achieved
IUD	336	90	93	90	75	348	450	77.3
Pill	505	328	269	305	345	1,247	1,355	92.0
Sterilization :								
By Female Surgery	105	33	50	80	90	253	170	148.8
By Injection*	7	6	10	19	25	60	—	—
Total	953	457	422	494	535	1,908	1,975	96.6

Source : Ministry of Public Health

*In experimental stage, excluding from the Plan target

1.3.2 Distribution of Economic and Social Services to Rural Areas

These include economic services for the support of agricultural output expansion and the distribution of agricultural products to markets, public utilities and social services. Major achievements in each activity are as follows:—

(1) Economic Services to Support Agricultural Growth and Diversification

(a) Irrigation

Major irrigation development policy during the Third Plan was aimed at reducing the construction of big dams and concentrating on the improvement and expansion of on-farm water delivery system. This improvement and expansion of water delivery system was carried out through land consolidation scheme and the construction of ditches and dikes at the farm level.

Until 1975, little progress had been achieved on the improvement and expansion of the water distribution system. The land consolidation programme, which is regarded as the most effective way to distribute water to various plots of land, covered an area of only 53,000 rai or approximately 0.3 per cent of the total irrigable area. In addition, by the end of 1976, the ditches and dikes that were completed covered only about 7.6 million rai of cultivated land or 38 per cent of the total irrigable area in which about 82 per cent was in the Central region. Furthermore, the area under ditches and dikes was not yet fully irrigated. In order to provide complete irrigation in this area, there is a need for on-farm development in the form of land consolidation in order to distribute water into the cultivated land particularly during the dry season. In 1975 the area under dry season cropping covered only about 2 million rai or only 10 per cent of the total irrigable area.

Table 2.5
Performance of Irrigation Projects Classified by Regions
at the End of F.Y. 1975

(Million Rai)

Projects	Northern Region	%	Central Region	%	Northeast Region	%	Southern Region	%	Total	%
Irrigable Area	3.56	17.7	12.42	62	2.38	12	1.71	8.5	20.07	100
Irrigated Area	2.37	15.7	10.34	68	1.49	9.8	.92	6.0	15.12	100
Ditches and Dikes	.742	9.7	6.21	82	.502	6.6	.147	1.9	7.60	100
Land Consolidation	—	—	—	.0525	99	.0006	1	—	.0531	100

Source : Royal Irrigation Department,
Ministry of Agriculture and Cooperatives.

(b) Land Development

The Third Plan included several projects designed to solve the lack of legal title to the land, alleviate the shortage of land for cultivation and to develop and rehabilitate land in general. By the end of 1975, land title certificates were granted to land holders covering an area of approximately 11.69 million rai or 11 per cent of the total cultivated area. On the shortage of land for cultivation, the allotment of land with title deed was undertaken by the Department of Land to cover about 358,161 million rai or 26,365 families by 1975. In addition, land allocation and occupational promotion in the form of self-help settlements, cooperative settlements and land allocation and development had been undertaken to cover an area of 2.6 million rai or 105,708 families.

During the Third Plan period, the man/land ratio became more acute. The average size of farm holdings decreased from 16 rai in 1973 to 14.7 rai. At the same time, the number of landless farmers increased. For 1975 alone, about 58,249 persons presented petitions to Farmers' Assistance Committee for the allocation of cultivated land. Meanwhile, tenancy problem has also appeared to be acute in some areas, particularly in the Central region where tenants accounted for about 200,000 families or 41 per cent of the total number of tenants in the Whole Kingdom. In sum, the results of efforts to alleviate land problems during the period under review have not been very substantial.

With respect to land quality, it is estimated that at present there are a lot of land areas in which the soil is not well suited for production. These areas are located in various regions, such as the saline soil areas in the Northeast which amount to approximately 8 million rai, the coastal saline soil areas of about 400,000 rai and swampy coastal soil areas of about 1.24 million rai. In addition, some areas lack a definite land development policy. These areas include Kula Rong Hai Plain in the Northeast which covers an area of approximately 1.8 million rai and the central areas of the Southern region (Prasang and Panom plain) of about 3 million rai. In these areas, the formulation of a comprehensive land development programme is required so that the people can cultivate such land and develop other occupational skills in order to increase their income.

(c) Agricultural Credit

A main emphasis in the Third Plan was to provide additional funds to extend both short and long-term credit to farmers through the Bank for Agriculture and Agricultural Cooperatives (BAAC). Despite the increase in the amount of the BAAC outstanding loans from 1,400 million baht in 1971 to 4,000 million baht in 1975, the supply of institutional credit is still considered to be very limited in relation to the demand for credit by farmer. Most of the credit extended by BAAC was direct lending to its customers. Between 1972-1975, the credit given by BAAC to farmers, agricultural cooperatives and farmers' group increased by an average of 32 per cent per annum.

Table 2.6
BAAC Outstanding Loans Between 1968-1975

(Million Baht)

Year	Total	Farmers	%	Agricultural Cooperatives	%	Farmers' groups	%
1968	662.2	373.3	56	288.9	44	—	—
1969	958.0	640.4	67	317.6	33	—	—
1970	1,162.9	753.7	65	407.2	35	—	—
1971	1,384.7	845.3	61	539.4	39	—	—
1972	1,675.3	993.8	59	681.5	41	—	—
1973	1,889.9	1,101.2	58	788.7	42	—	—
1974	2,511.3	1,446.1	58	966.6	38	138.6	5
1975	4,556.8	2,472.8	54	1,642.4	36	440.9	10

Note 1/ Farmers' Groups which are BAAC customers.

Source: BAAC Report on Performance and Balance Sheet 1975

During the Plan period, commercial bank loans to agriculture was very small in relation to the total amount of loans to other activities. In 1975, commercial bank loans to agriculture accounted for only 5 per cent of the total lending. In order to increase the availability of institutional credit to farmers, the Government set up a target to raise the amount of commercial bank lending to farmers to 3,500 million baht through BAAC.

Thus far, the distribution of agricultural credit has not yet reached the majority of the farmers. Until 1975, farmers who received agricultural credit accounted for only 10 to 15 per cent of the total. BAAC's condition in requiring collateral on loans is one of the main obstacles which has limited the expansion of agricultural credit, because a substantial number of farmers do not have title deeds on their land. Most of BAAC's customers are therefore well-to-do farmers whose average size of land holdings is double the national average. Hence, the expansion of farmers organizations is essential in order to distribute credit to more farmers.

(d) Agricultural Research and Extension Programmes

A key strategy of the Third Plan is to expand research activities to develop and produce improved seeds, particularly for the accelerated production programmes for such crops as rice, maize, cotton and soy bean. At the same time, it was recognized that the distribution of improved seeds to farmers through extension service was vitally important.

During the Third Plan period, regional agricultural centres were established in the Central region, Northern region and Northeastern region to help

coordinate the research activities being carried out at about 100 smaller government agricultural research stations which are scattered all over the country. Major progress on research activities thus far as witnessed by the production of new varieties of crops such as Rice Ko Khor 1-9 varieties which can produce a yield of 500-1,000 k.g./rai as compared with the average yield of 270 k.g. per rai prior to the Third Plan period, Maize Suvun 1 variety which can produce a yield of about 375 k.g./rai as compared with the yield of 42 k.g./rai of Guatemala Prabaht variety. Despite considerable progress in these areas, research relating to cassava and kenaf, which are so important for the rainfed-agriculture of the Northeast has not yet produced comparable results. In the past, agricultural research activities for crop improvement were heavily concentrated on the development of high yielding varieties with better immunity from disease. Little research work has been done to develop quicker growing varieties which would reduce the period of cultivation. In addition, there are some research findings which could be helpful to farmers but remain unknown to them because of the poor linkage between research and the extension programmes on the one hand, and a less than ideal agricultural extension service due to an inadequate number of extension workers. Although extension services have been unified and the number of extension officers has been increased from 1:8,000 farm families in 1971 to 1:1,158 farm families in 1976, still, the number of extension workers in the field is not adequate, considering the fact that extension workers spend about half of their time carrying out other duties. Moreover, the distribution of extension workers among various regions can be improved further.

In 1975, the number of extension workers in the Northeast was in the order of one for every 622 farm families as compared with 1:782 farm families in the Central region and 1:815 in the Southern region.

Thus far the supply of improved seeds is still inadequate to meet the seed requirements of farmers. Most of the farmers have to use poorer quality seeds from their own farms or from the market. It is estimated that the demand for seeds for 7 major crops such as rice, maize and beans is about 350,000 tons per annum. At present, the Government is able to meet only 1 per cent of this requirement. Hence, it is evident that the capacity of the Government sector in seed production is still very limited.

(e) Farm-to-Market Road Network Programmes

Due to the completion of most major national highways during the First and Second Plan, the main transportation development policy of the Third Plan was to develop farm-to-market road networks consisting of feeder roads, rural roads, and local roads.

During the Third plan period, more development budget was allocated for the construction of feeder roads, rural roads and local roads. The total actual disbursement for these purposes amounted to approximately 3,592 million baht or 73 per cent of the total actual disbursement on total road construction. At the end of 1975, the total length of all types of roads, that is, national highways, feeder roads, rural and local roads as well as roads on irrigation dikes increased to 31,087 kilometers as compared with 22,124 kilometers in 1971. The proportion of farm-to-market roads which includes feeder roads, rural and local roads and roads on irrigation dikes increased from 50 per cent of the total road network to 59 per cent in 1975.

Table 2.7
Road Network 1971-1975

Type	Length (K.M.)			
	1971	%	1975	%
National Highway ^{1/}	10,977	50	12,658	41
Farm-to-Market Roads:—	11,147	50	18,429	59
— Feeder roads ^{2/} and local roads	9,935	45	16,659	53
— Road on Irrigation dikes ^{3/}	1,212	5	1,770	6
Total	22,124	100	31,087	100

1/ Under the jurisdictions of Highway Department.

2/ Under the jurisdictions of Highway Department,
ARD and Public Works Department.

3/ Under the jurisdictions of Royal Irrigation Department.

Sources : NESDB.

In spite of the notable progress achieved in the construction of farm-to-market roads during the Third Plan period, the ratio of road length to square kilometer of cultivated land is still low by international standards. In 1975, Thailand had 145 meters of road per one square kilometer of cultivated land which is substantially lower than the IBRD standard of 1,500 meters of road to one square kilometer of cultivated land. As such, considerable increases in the length of these types of roads in future will be necessary to support production more effectively.

(2) Public Utilities

(a) Power

Power installed capacity has increased from 1,169 megawatts in 1971 to 2,477 megawatts in 1976. The structure of installed capacity has changed in favour of steam power which increased from 44 per cent of total installed power in 1971 to 55 per cent of the total in 1976. Meanwhile, the proportion of hydro electric power installed capacity decreased from 39 per cent in 1971 to 37 per cent in 1976.

Table 2.8

Power Installed Capacity during the Second and Third Plans

Sources	By the end of the Second Plan (1971)		By the end of the Third Plan (1976)	
	Installed Capacity (Megawatts)	%	Installed Capacity (Megawatts)	%
Hydro	451	39	909	37
Steam	510	44	1,334	55
Turbine Gas	165	14	1,165	7
Diesel	43	3	30	1
Total	1,169	100	2,438	100

Despite the substantial increase in power installed capacity during the Third Plan period, the distribution of power has not yet reached the majority of the people. At the end of 1976 only 20 per cent of the population had access to electricity. Power shortage is greatly felt in the rural areas in which only 8,950 villages or 19 per cent of the total number of villages were electrified by the end of 1976.

(b) Provision of Water Supply

Major problems relating to water supply include the difference in the provision of safe and convenient services and the shortage of water for consumption during the dry season. With respect to the difference in the provision of safe and convenient services, in 1976, the Bangkok metropolitan area has .28 cubic metres of water supply per head per day. Other provinces have only .19 cubic meters per day. Moreover, the number of water users in the Bangkok metropolitan area represents about 63 per cent of the total population. In the provinces, despite increases in production capacity to serve a population of 4 million, the proportion of water users to total population amounts to only 37 per cent. This percentage is practically the same as in 1971. This indicates that inspite of increases in production capacity, efficiency in the distribution of water is very much lacking. It is notable that the water rate charged in the Bangkok metropolitan area and in the provinces is substantially different. The consumption of 100 cubic meters of water supply in the Bangkok metropolitan area will cost about 153.50 baht whereas in the provinces, this would cost 200 baht.

By the end of 1976, although the expansion of rural water supply project has already extended benefits to about 69 per cent of the total population and 59 per cent of total villages, the provision of water suitable for consumption in the form of drilling wells and piped supply has covered only 19 per cent of the total rural population. The rest of the service is provided in the form of shallow wells, reservoirs and ponds which have to be constantly maintained and the quality of water is not

up to drinking standard. Moreover, according to the 1974 survey on the water supply shortage condition in the Northeast, it was revealed that there were about 2,134 villages in which the people had to travel 3-4 kilometers to obtain potable water during the dry season.

(3) Social Services

(a) Education

Major emphasis on educational development during the Third Plan is to provide more opportunity for the people to receive education particularly through the expansion of compulsory education in conformity with the increasing number of children of school age and the improvement and expansion of secondary education in the provinces.

Educational development during the Third Plan period has resulted in the increase of enrollments in every level of education. In 1975, 7.8 million students were enrolled in schools, representing about 44.5 per cent of the total number of children of school age (age group 7-24 years). In 1970, only 40.7 per cent of the total number of children of school age were attending schools. This means that even in 1975, out of school children constitute about 56 per cent of the total population of school age and the Government has no definite development programme for these children.

During the Plan period, inequality in receiving education still exists for both pre-school children and children of school age. At the pre-school level, children in the rural areas and in slums have less chance to attend kindergarten classes. According to the research of the Ministry of Education, children in Bangkok have a better chance to enter kindergarten classes than those who live in other provinces. Access to this level of education also varies among regions, that is, children in the Central region have better access to kindergarten education compared with children in the Northeast.

Inequality of access to education also exists for children of school age. In the Central region, the enrollment rate of children from 7 years old in lower primary level education is higher than in other regions. There is also a difference in the opportunity to attend classes at a slightly higher level as indicated by the ratio between the number of seats in Prathom 5 and the number of seats in Prathom 4 which is about 36 per cent in the Northeast and 55 per cent in the Central region. At the secondary education level, despite the increase in the enrollment ratio from 26 per cent of the total number of children of school age in 1961 to 42 per cent in 1975, children in rural areas still have less opportunity to continue their education at the secondary level. Most students in secondary schools are from well to do families in towns. The number of children in the Bangkok metropolitan area that are enrolled in secondary schools account for about 5.11 per cent of the total population while secondary school enrollments in Kamphangpet province account for only 0.58 of the total population. At the university level, according to the survey in 1973, it was revealed that only 6 per cent of the total number of students enrolled came from farm

or rural families. Hence, it can be said that inequality in the opportunity to receive education still exists among the rich and the poor, among people living in rural and urban areas.

(b) Public Health Services

The Third Plan aimed at the expansion and distribution of public health services to reach a larger number of people, particularly in rural areas. During the Plan period, public health services provided for the people in rural areas through Medical and Health Centres (first class health centres), Second Class Health Centres and Midwifery Offices still differ substantially to the services provided for the people living in urban areas.

The gap in public health services between the urban and rural areas is clearly indicated by the ratio of 1 hospital bed per 150 people in urban areas compared with 1:900 in rural areas as well as the ratio of 1 doctor per 1,621 people in urban areas compared with 1:30,863 in rural areas. Moreover, as there are only 255 Medical and Health Centres in the country, only 48 per cent of the total number of districts in the Kingdom have such centres. There are only 3,439 Second Class Health Stations at the tambol (sub-district) level, or 64 per cent of the total number of tambols and only 1,550 Midwifery Centres at the village level which is equivalent to about 8 per cent of the total number of villages in the Kingdom.

All together at present the existing public health services can serve only about 15 per cent of the total population. Approximately 51 per cent of the total population have to rely on private services or traditional doctors. Hence, it is evident that the provision of public health services so far has not yet reached the majority of population, particularly in rural areas.

1.3.3 Opportunity Creation.

Government programmes during the Third Plan which aimed basically at creating more opportunities for people to develop skills further and to make better use of the infrastructure provided can be summarized as follows:-

(1) Farmers Organizations. One of the main strategies of the Third Plan in this area is to promote the formation of agricultural institutions which promote cooperative efforts among farmers and help on the production and marketing sides. The target is to establish 500 farmers' groups annually. A total budget of 1,706.66 million baht which is about 12 per cent of the total agricultural development expenditure has been earmarked to support the formation of agricultural institutions, the provision of agricultural credit as well as demonstration and training activities.

Between 1971 and 1976, the number of farmers' groups decreased from 4,195 to 3,037 groups, due mainly to the enlargement in the size of farmers' groups from an average of 49 members in 1971 to 102 members in 1976. During 1976, members of farmers' groups under three major organizations namely, the Department of Agricultural Extension, BAAC and Agricultural Cooperatives, increased by 554,935 members or 71 per cent. By the end of 1976, a total of 1.3 million farmers belonged to these 3 agricultural institutions or 24 per cent of the total number of farm families.

Table 2.9
Number of Farmers' Groups and Members of Major
Agricultural Institutions

	1971	1975/76	Increase/Decrease
A. Farmers' Groups			
Number of Groups	4,195	3,037	- 27.60
Number of Members	205,488	309,838	+ 50.81
Average Members Per Group .	47.98	102.02	+ 108.33
B. Agricultural Cooperatives			
Number of Groups	1,336	788	- 41.02
Number of Members	308,459	504,777	+ 63.64
Average Member Per Group ..	230.88	640.58	+ 177.45
C. BAAC			
Member of Customers from Farmers' Groups	262,087	516,314	+ 97.00
Total	775,994	1,330,129	+ 71.51

As stated above, membership in these three agricultural institutions increased by 71 per cent during 1971-1975/76, but members are still unequally distributed among regions. In the central region, farmers who are members of one of these three major agricultural institutions constitute above 39 per cent of the total number of farm families compared with 19 per cent in the Northeast. Furthermore, taking the total number of memberships in all agricultural institutions into consideration it can be seen that at present about 4 million farm families or 76 per cent are still outside agricultural institutions.

There are many factors attributable for this lack of participation by the majority of farmers in agricultural institutions. One of the most significant factors is concerned with the established rules and regulations. For example, to be eligible for credit, BAAC stipulates that its customers have to earn a reasonable income from the selling of their agricultural products annually and landless farmers should not constitute more than one third of total membership in each group. In the case of agricultural cooperatives members must all be land owners. These rules and regulations have already prevented a substantial number of landless farmers from participating in these agricultural institutions. However, the land ownership deed is only one of the guarantees for obtaining credit as can be seen from the rate of reserve for debt loss set by BAAC for farmers with ownership of land at 5 per cent, for a group of customers

in which one third of its members own land at only 1 per cent and for agricultural cooperatives in which all members own land at 5 per cent. Hence, the expansion of credit by BAAC is equivalent to the increase in the risk of debt loss during the Third Plan period. Thus it is necessary that BAAC's credit policy has to be reviewed in order to extend more credit to farmers in the future.

In 1975, BAAC lending to farmers' groups amounted to 387.8 million baht or 11 per cent of total lending to farmers. Loans to agricultural cooperatives amounted to 866.1 million baht or 26 per cent of total loans. Loans to customer groups amounted to 2,100 million baht or 62 per cent of total loans to farmers. It can be seen that the customer groups of BAAC received most of the credit released at an average of 4,069 baht per member compared with an average of 2,282 baht per member for agricultural cooperatives and an average of 1,251 baht per member for farmers' groups.

From the foregoing discussion, it is evident that the attempt to strengthen the role of agricultural and credit institutions in providing various services which are required for increasing the productive capacity of the people has not been totally successful and that many problems still have to be solved. To date, the farmers' groups which take both land holders and landless farmers as members have been able to expand members to cover only 6 per cent of the total number of farm families. The landless farmers who are members of farmers' groups are not eligible for membership in agricultural cooperatives and are less likely to be members of BAAC customer groups. It is thus necessary that rules and regulations should be modified so that more credit can be extended to those landless farmers.

Thus far, the amount of credit extended through farmers' group is still very small and this has had the effect of discouraging farmers from joining farmers' groups. So far the three major agricultural institutions have only been able to assist the well-to-do farmers instead of the poor farmers who are in real need of assistance. The land ownership and income regulations have prevented poor farmers from becoming members of BAAC and the agricultural cooperatives and as such has denied poor farmers the opportunity to join together in groups. Uneven support by the Government is also a factor which makes it difficult for further expansion of farmers' groups as indicated by the fact that farmers who are outside agricultural institutions account for 76 per cent of the total number of farmers. Moreover, existing farmers' groups have also weakened. In 1975, 287 farmers' groups or 9 per cent of the total number of farmers' groups did not know the exact number of its members. The weakness of farmers' groups during the Plan period has made it difficult for farmers to receive assistance from the Government and to help each other through collective effort.

(2) Agricultural Price Stabilization Policy. In addition to the improvement of agricultural and credit institutions, the Third Plan also placed emphasis on agricultural price stabilization which is a factor attributable to the strengthening of farmers' capability in utilizing government services and factors of production for the increase of their income and output.

Though agricultural price stabilization was a major strategy in the Third Plan, targets and guidelines for realising this had not been clearly set. During 1971–1974, the sharp rise in export prices of many major agricultural commodities and accompanying increase in domestic prices resulted in additional money income for farmers, particularly those marketing paddy, rubber and maize. The additional income that farmers gained during 1971–73 was around 10 billion baht. Although this improvement in income distribution has to a certain extent helped improve income distribution in favour of the rural sector, farmers did not fully benefit from this gain in prices due to the Government fiscal and export control measures which have been designed to protect urban consumers when export prices increase significantly.

During 1974–1976, the level of external demand diminished, resulting in a decrease in export prices of major agricultural commodities. The farm-gate price of paddy decreased from an average of 2,151 baht per ton in 1974 and 2,220 baht in 1975 to only 1,800 baht in early 1976. Between 1974–1975, the Government fixed minimum farmgate prices for two crops, namely paddy and sugarcane. The minimum farmgate price for sugarcane of 300 baht per ton established by the Government was successfully maintained as a result of favourable foreign demand. However, in the case of rice the minimum farmgate price could not be realized due to the lack of an overall agricultural price policy for each crop which was to be used as a guideline for the operation of two major government enterprises concerned with the marketing of agricultural commodities, namely the Warehouse Organization and the Marketing Organization for Farmers. In addition, the operations of these two government agencies were also limited by the shortage of funds, manpower and storage facilities. Their operations were too insignificant to support the paddy price guarantee programme. Subsequently, the Government had to announce a new pricing policy for paddy. The support price for 5% paddy was fixed at 2,100 baht per ton. This minimum price support was effective in only a few localities.

In summary, the implementation of an agricultural price stabilization programme thus far has been undertaken just to solve immediate problems. Existing policy instruments are only effective to suppress domestic prices during the period of favourable demand in external markets. On the contrary, no effective measures nor long term projects have been formulated for raising the price of agricultural commodities during periods of slack demand. Furthermore, agricultural price stabilization programmes have so far been limited to only a selected number of crops. Thus farmers are still affected considerably by price fluctuations. Policies relating to overall production and distribution in future must be formulated so that they are consistent with one another.

2. Third Plan Development Expenditures

2.1 Public Development Expenditures

An overall financial target for public development expenditure of 100,275 million baht was proposed for the Third Plan. It was envisaged that of this total, about 78,845 million baht would come from national budget appropriations and from some state enterprises, 11,930 million baht would be raised from foreign loans, and 5,000 million baht would come from foreign grants.

2.2 Resources Allocation

Due to adjustments for inflation, the total public development expenditure target for the Third Plan increased from the initial target of 100,275 million baht to 131,263 million baht. Of this amount, approximately 99,470 million baht was allocated from the budget and state enterprises, 26,693 million baht from foreign loans, and 5,000 million baht from foreign grants.

Despite improvements in project preparation capabilities in operating agencies, the actual disbursement of funds for public development programmes during the Third Plan period amounted to only 92,548 million baht or 70.5 per cent of the actual allocation which is low in comparison with the rate of 72.4 per cent that was achieved during the Second Plan period.

Of the total 92,548 million baht actual disbursement, about 78,197 million baht was disbursed from budget appropriations and state enterprises. This means that about 79 per cent of the total actual development expenditure originated from domestic sources. This shortfall in the financial implementation of the Third Plan can be attributed to the sharp rise in the prices of construction materials which forced many contractors to abandon their construction projects and the Government subsequently had to make further adjustments and renegotiate new contract prices, particularly for projects in the transport and communications sectors. In addition, some construction projects were further delayed as some contractors needed time even after the new budget approval to re-organize their operating units. Also, some of the implementing agencies lacked the absorptive capacity to effectively use the budget allocated to their development projects.

Despite the doubling of foreign loans commitment from the originally planned amount of 11,930 million baht to 26,793 million baht, several shortfalls still prevailed on the disbursement of foreign loans. At the end of the Third Plan the actual disbursement of foreign loans amounted to only 11,686 million baht or 43.6 per cent in comparison with 62.2 per cent during the Second Plan. This considerable shortfall in loan disbursement can be explained as follows. During the Third Plan period, it was necessary to make adjustments for the rising costs of foreign loan projects and this delayed the project commencement date. Moreover, some projects were not properly prepared and additional pre-investment studies had to be carried out. In other instances, details relating to bidding documents and the disbursement of loans did not meet the requirements and standards set by foreign sources of

financing and more time had to be spent to carry out such modifications. Further delays were also encountered in cases where the provision of counterpart funds for domestic spending was not consistent with the utilization of foreign loans.

The projected amount of foreign grants in the Third Plan was 5,000 million baht. However, during the Plan period, the actual amount of foreign grants received was only 2,667 million baht. Despite its policy to reduce foreign assistance, the United States was still the largest donor, contributing 35.5 per cent of total grants. The United Nation's Specialized Agencies, the Columbo Plan and others provided 21.6 per cent, 18.4 per cent and 19 per cent of total grants respectively.

Table 2.10
Development Expenditures Classified by Sources
during the Third Plan

(million of baht)

Sources	Planned Target	%	Actual Appropriation	Actual Disbursement	%
Domestic Finance ^{1/}	83,345	83	99,470	78,197	79
Foreign Loans	11,930	12	26,793	11,684	44
Foreign Grants	5,000	5	5,000	2,667	53
Total	100,275	100	131,263	92,548	70

^{1/} Including national budget and self-financing of public enterprises and local governments.

2.3 Development Expenditure Financed from Domestic Sources : Sectoral Implementation

It is possible to breakdown and summarize the Central Government's development expenditures by actual sectoral disbursements as follows:-

2.3.1 Agriculture and Irrigation. For this sector, 19,985 million baht was allocated. Total actual disbursement in this sectors during the Third Plan was 10,961 million baht or 54.8 per cent of total allocation. Although development

expenditure allocation emphasised agricultural promotion programmes and the improvement of the water distribution system of existing irrigation projects, the disbursement of the development budget for these projects was still low. The following agricultural and water resource development projects recorded shortfalls in disbursement:—

- Plant Pest Control and Eradication
- Promotion of Rice Production
- Development of Economic Crops
- Nam Pong Project
- Greater Mae Klong Project
- Pattanee Project
- Pranburi Project
- Pittsanuloke Project
- Diversion Weir
- Water Tank Construction

2.3.2 Industry, Mining and Commerce. The total budget appropriation for these sectors was 4,258 million baht. Actual disbursement was 2,416 million baht, or 56.4 per cent of total allocation. Most of the budget for these sectors were earmarked for projects designed to promote investment by the private sector. As for the main project that was prepared for rural people namely, the survey and drilling of artesian wells project, actual disbursement of a substantial budget was only 65 per cent.

2.3.3 Transport and Communications. Total development budget allocation for this sector was 22,543 million baht. Actual disbursement amounted to 16,943 million baht or 75.2 per cent of total budget allocation. Actual implementation of projects in this sector tended to lag behind the set targets. Actual disbursements for the following projects were well behind schedule.

- Development of Provincial Air Ports
- Flight Radio Communication System
- Development of National Highways
- Development of Provincial Highways

2.3.4 Power. 14,751 million baht was allocated to this sector. Actual disbursement was 10,076 million baht or 68.3 per cent of total budget allocation to the power sector. Most of the budget for this sector was allocated to the construction of power generation. However, due to the Government's policy to encourage state enterprises in the power sector to be self-financing, most power development projects were financed by loans in which actual disbursement was higher than that of other sectors. The power projects which encountered shortfalls were:—

- Lam Dome Noi Project
- Mekong Development Project
- Pa Mong Project



2.3.5 Public Utilities and Welfare Programmes. The total budget appropriation for this sector was 20,052 million baht. Actual disbursement amounted to 15,200 million baht or 75.8 per cent of the total budget allocation to this sector. Most of the budget allocated to this sector was earmarked for occupational training, land allocation, land settlement and community development. Projects which encountered problems in disbursement are as follows:—

- Occupational Training
- District and Provincial Area Development
- Land Development involving large areas
- Aerial Photo Mapping for Land Titles
- Rural Water Supply
- Provincial water Supply
- National Housing Authority Projects

2.3.6 Public Health. Total budget appropriation for this sector was 7,119 million baht. However, actual disbursement amounted to only 4,237 million baht or 59.5 per cent of total budget allocated to this sector. Projects with low rate of disbursement include the following:—

- Provincial Hospitals
- Health Centres.
- Village Water Supply
- Nurse Teacher College

2.3.7 Education. Total budget appropriation for this sector was 42,555 million baht. Actual disbursement amounted to 31,709 million baht or 74.5 per cent of total budget allocation to this sector. This sector received the highest amount of development budget appropriation which is approximately 32 per cent of the total development budget. Projects which encountered shortfalls in disbursements included:—

(1) Primary and Secondary Education Levels

- Expansion and Improvement of Kindergartens
- Secondary and Pre-University Education
- Development of Provincial Secondary Schools
- Expansion and Improvement of Agricultural Schools
- Expansion and Improvement of Trade and Multi-Trades Schools
- Expansion and Improvement of Vocational Schools
- Curriculum Development of Technical Department
- Expansion and Improvement of Physical Science Teachers Training at Certificate Level

(2) University Level

- Expansion and Improvement of Teacher Training at Degree Level
- Expansion and Improvement of Kasetsart University

- Faculty of Medical Science, Khon Kaen University
- Faculty of Medical Science, Rama Dhibodee
- Faculty of Medical Science, Songkhla University
- Faculty of Science, Songkhla University
- Faculty of Education, Songkhla University

Table 2.11
Actual Disbursement against Development Budget
Appropriation Classified by Sector during the Third Plan
(Millions Baht)

	(1) Planned Target	(2) Actual Budget Appropriation	(3) Actual Disbursement	(3)/(2) Ratio
Agriculture & Irrigation	13,695	19,985	10,961.0	54.8
Industry, Mining and Commerce	2,350	4,258	2,419.0	56.8
Transport & Communication	19,475	22,543	16,943.0	75.2
Power	7,875	14,751	10,079.0	68.3
Total Economic Sectors	43,395	61,537	41,402.0	67.3
Social Welfare Development	2,700	5,189	15,200.0	75.8
Local and Urban Develop- ment	14,930	14,863		
Public Health	6,340	7,119	4,237.0	59.5
Education	32,910	42,555	31,709.0	74.5
Total Social Development Sectors	56,880	69,726	51,146.0	73.4
Grand Total	100,275	131,263	92,548.0	70.5

3. Outstanding Problems

Although rapid strides were made in development during the Third Plan period, the country continued to face the problems of slow economic recovery, income disparities, population growth and unemployment, and basic resource depletion and environmental deterioration. These outstanding problems need new development strategy and approach in the Fourth Plan formulation.

✓ 3.1 Slow Economic Recovery

Since 1974, the Thai economy has been hit by a recession similar in many respects to the recessions being experienced by many other countries. This economic

slow down can be attributable to changes in the world economic situation starting with the international monetary crisis, which includes the successive devaluations of the U.S. dollar, the sharp rise in world prices of food and raw materials coupled with the oil crisis which resulted in world wide stagflation. Later on in 1975, Thailand went through a period of political and social transition that started with the political changes in neighbouring countries, namely Laos, Cambodia and Vietnam. Domestic political instability, brought on by frequent changes of governments and labour unrest during 1975-76 also contributed to the slackening of economic activities in the latter half of the Third Plan.

It is thus evident that the stagnation in economic activities or slow economic recovery is an immediate problem confronting the Government in the early phases of the Fourth Plan. Efforts to correct imbalances existing in the economic and social structure in the long-run will be irrelevant if measures to accelerate economic recovery do not produce results in the short-run. The Thai economy must put back on its feet again and national stability must be ensured.

3.2 Imbalanced Economic Structure and the Increase of Income Disparities

It is now generally recognized that the past economic growth and structural changes had brought about increasing disparities in the standard of living between various income groups and regions of the country. Most of the production expansion and diversification, productivity increase took place mainly in the Central region while the economy of other regions experiences relatively slow growth and with little structural change. Hence, most of the people living in periphery regions with the exception of the Central region in terms of living standards, income and employment opportunities are still dependent upon traditional agriculture in which production is seasonally oriented and output expansion is achieved mainly via the expansion of new cultivated areas instead of productivity increases. Moreover, the problem of income disparities is also intensified by the current agricultural prices, the lack of factors of production, and increase debt burden on the part of the rural farmers.

Apart from the agricultural structure, there is also some imbalance witnessed in industrial development in Thailand. In the past, the strong stimulus from rapid growth in the industrial sector generated expansion of overall economic growth. However, most industrial activities are concentrated in and around Bangkok Metropolitan areas, and basically are import-substitution industries which depend mostly on imported raw materials and have very low labour content. These industries have very low backward linkages to the rural agricultural and natural resource development programmes.

Hence, it is evident that so far, structural imbalances persist in the economy in terms of intersectoral and interregional distribution of production which contribute to widening income disparities. This is a continuing problem which requires immediate corrective action and proper set of development strategies during the Fourth Plan period.

✓ 3.3 Basic Social Problems

This unbalanced growth and associated income disparities among various income groups and regions of the country have brought about many basic social problems, particularly mass poverty of people in rural areas where social services are lacking and the congested and deteriorated urban social conditions in the Bangkok metropolitan area as well as other urban areas.

① Increased rural-urban migration was largely responsible for the over-rapid growth of population in Bangkok and other cities. The result of this has been more congestion and environmental deterioration. This is clearly indicated by the inability to expand urban infrastructural services and housing to meet the increasing demand generated by rapid population growth. At present, the main urban problems are the mushrooming of slums, the worsening of traffic congestion, urban unemployment, increasing crime rate, drug addiction and the deterioration of mental health of the urban population. All of these are basic social problems which require immediate corrective actions. High priority must be given to measures and projects designed to alleviate these social problems and these measures and projects must be consistent with those designed to improve the economic structure during the Fourth Plan period.

✓ 3.4 Population and Unemployment Problems

The pattern of growth in the past has increased the complexities of problems relating to population, human settlements and unemployment. Despite the achievement of the population growth target during the Third Plan, the labour force was still increasing at 2.6 per cent per annum during the Plan period and is expected to increase at 2.3 per cent per annum during the Fourth Plan period. In addition, more than 70 per cent of the labour force consists of those with Pathom 4 education or lower who cannot find better employment alternative than low paid occupations which require labour.

The worldwide economic recession, political instability and labour unrest during 1974-75 resulted in the reduction of private investment which in turn affected the attainment of the Third Plan target with respect to employment creation. Thus the level of unemployment increased during the Third Plan period. During 1973-75, the level of urban unemployment increased mainly because the seasonal flow of migrant labour from rural areas into urban areas was reinforced by a flow of agricultural labourers released by crop failure. Among the unemployed, two groups in particular deserve special attention. The first group consists of those who lost their jobs as a result of the closure of various business establishments due to the recession and the closure of U.S. military bases in Thailand. The second group consists of middle level and high

level manpower who cannot find employment after graduation. The level of unemployment among the educated increased alarming during 1973-75. Taken as a whole, the unemployment problem is serious and requires immediate corrective action during the Fourth Plan period.

3.5 Deterioration of Environmental Conditions and Natural Resources Management Problems

The deterioration of environmental conditions of major natural resources particularly forest, land, water and mineral resources is a fundamental problem which has considerable consequences for national survival and Thailand's future development potential. During the Third Plan period, this problem had been intensified as a result of population growth and the pattern of human settlements associated with the type of production structure that has evolved as well as the lack of clear cut policy on resource management and ecosystem preservation.

① The serious problem of environmental deterioration and resource mismanagement is witnessed by the rapid depletion forest land. At present actual forest area constitutes only about 38 per cent of the total land area of Thailand. The depletion of forest areas is due mainly to illegal felling and the destruction of watershed areas as well as the expansion of cultivated areas into forest land. So far, the Government has not been able to provide effective measures for the preservation of forests and nor measures for ensuring that different types of land are put to their best uses. To date, the annual rate of forest destruction has tremendously outpaced the rate of replacement by the Government's afforestation programme. In addition, the techniques used for extracting mineral resources at present have been chosen without regard for resource and ecosystem preservation. As a result, social costs are unnecessarily high and social benefits tend to be on the low-side. ②

③ At the same time, unbalanced urbanization in Thailand has resulted in the overurbanization of the Bangkok Metropolitan area, which is regarded as one of the most dominant primate cities in Asia, and the underurbanization in other regions of Thailand. This urban growth pattern has contributed significantly to the deterioration of environment conditions in the Bangkok Metropolitan area.

From the foregoing discussion, it is evident that priority has to be given to alleviating this critical problem in a systematic way.

CHAPTER III

NATIONAL DEVELOPMENT OBJECTIVES, TARGETS, AND STRATEGIES

1. National Development Objectives

The evaluation of development during the Third Plan period and outstanding problem as presented in Chapter 2 led to the formulation of the new national objectives for economic and social development for the Fourth Plan which can be summarized as follows:—

✓ **1.1 To Accelerate Economic Recovery.** Economic recession was a main problem during the later half of the Third Plan. Immediate measures will be undertaken to revitalise the economy in order to ensure a higher and sustainable rate of output, investment and employment expansion during 1977 and 1978. In so doing, a more solid foundation can be established for further development during the later half of the Fourth Plan period. In addition to striving for economic recovery, domestic price and international reserves have to be maintained at a satisfactory level to provide necessary conditions for economic stability and a conducive investment climate during the Fourth Plan period.

✓ **1.2 To Reduce Income Disparities.** Measures will be undertaken to improve income distribution and to raise the living standard of various target groups such as farmers, labourers, and others with low income. In addition, various measures will be implemented to spread the fruits of development as well as social services to people in rural area to a greater extent.

1.3 To Reduce Population Growth Rate, Improve Manpower Quality and Increase the Level of Employment. Measures will be taken to lower the population growth rate to make it commensurate with natural resource availability and the envisaged economic growth rate. At the same time, manpower must be developed to meet the country's future manpower requirements so that a higher level of productivity can be achieved in the long run. Employment opportunities must be generated in both rural and urban areas to lower the level of unemployment. This means that additional jobs must be created to absorb those that will be entering the labour force in future.

✓ **1.4 To Improve the Management of Basic Resources and Rehabilitate Environmental Conditions.** Particular emphasis will be placed on the allocation and rehabilitation of land, forest, water and mineral resources for optimum economic

efficiency. Measures will also be taken to check and limit the deterioration of these resources.

✓ **1.5 To Strengthen National Security Management.** Appropriate emphasis will be stressed on development of critical natural resources that are vital to the national security management and proper economic mobilization plan will be formulated accordingly. At the same time, special area development programme will be launched to support the national security objective.

2. Major Development Targets and Required Supporting Policy Measures

In order to achieve the shorter-run objectives of a rapid economic recovery and a greater degree of economic stability during the first 2 years of the Fourth Plan as well as to solve basic longer-run problems that can be foreseen, the following overall targets and supporting policy measures have been set:-

2.1 Production Targets

It is envisaged that the gross domestic product (GDP) during the Fourth Plan will increase at an average annual growth rate of 7 per cent. To attain this overall growth rate, each key production sector must achieve the following targets:-

2.1.1 Agricultural Production. Agricultural value added is projected to expand by 5 per cent per annum. As the Government will put more emphasis on the conservation of forests and watershed areas, the expansion of cultivated land will be kept at a rate of not less than 500,000 rai per annum or 2.5 million rai over the 5 year period. In the light of land limitation, the strategy for agricultural development has to emphasize structural improvement within the agricultural sector. Firstly, production will be increased through crop intensification. Major economic crops in which intensified production can be undertaken include dry season paddy, maize, bean, sorghum, sugar cane, kenaf, tobacco, cotton and rubber. Secondly, further agricultural diversification will be promoted, particularly in the livestock and coastal fishing sub-sectors. Other economic crops with good prospects for further diversification are coconut, sericulture and oil palm. Programmes for increasing the production of vegetables and fruits will also be set up. Further measures will be taken to check land deterioration which result from the cultivation of certain economic crops such as tapioca so that a satisfactory level of output can be maintained in the long run. Additional measures will be taken to prevent the over exploitation of marine resources-

2.1.2 Industrial Production. Industrial value added is projected to increase at a minimum rate of 9.6 per cent pre annum over the Plan period. Firstly, the output of export industries such as sugar, textiles and cement will be increased in

accordance with demand in world markets. Secondly, emphasis will be placed on the development of agro-industries such as paper, food canning and livestock feeding which can stimulate agricultural production by creating additional demand and can provide additional rural employment. Thirdly, small-scale import substitution industries which utilize indigenous raw materials and labour will be expanded to meet domestic demand. These industries include spare parts, mechanical repairs and spare parts, metallic as well as nonmetallic industries.

Attempts will also be made during the Fourth Plan period to create favourable conditions for the future establishment of heavy industries such as steel, petro-chemical and chemical industries.

2.1.3 Mineral Production. The target growth rate in this sector is projected at 3.2 per cent per annum. Most of the output expansion is expected to be derived from existing minerals exploited such as tin, barite, wolfram, manganese and antimony. Fluorite production is envisaged to remain constant throughout the plan period. This sectoral target growth rate is consistent with the conservation objective of checking the rate of mineral extraction and is the rate that will provide sufficient future employment expansion in this sector. As for other new minerals such as natural gas, petroleum and rock salt, measures will also be undertaken to accelerate production after the exploration of deposits is completed,

2.2 International Trade Targets

To attain the GDP growth rate target of 7 per cent per annum and short-term economic recovery, the following export and import targets must be achieved:-

2.2.1 Export Targets

Export earning at market price is projected to increase at an annual average of not less than 13.7 per cent. Merchandise and services exports are envisaged to grow at 14 per cent and 12.2 per cent respectively. To achieve this envisaged rate of expansion, systematic export planning has to be undertaken by the Government. Such planning must be consistent with domestic production possibilities as well as demand in world markets.

With respect to merchandise exports, expansion targets consist of increase in export volume of 7.5 per cent per annum and an increase in price at an average of 6.1 per cent per annum. The targets for increasing the export volume of major agricultural, industrial and mineral output are set as follows:-

Table 3.1
Exports Volume Targets

Exports Item	Targets for Annual Export Increase (%)
Agricultural Products	
<ul style="list-style-type: none"> With large export volume e.g. rice, maize, rubber and tapioca products. 	3.4%
<ul style="list-style-type: none"> With promising external markets e.g. tobacco, shrimp, squid, mung beans and fresh fruits. 	14.4%
<ul style="list-style-type: none"> Other exports with potential market e.g. sorghum, beans, castor beans, lac and cattle. 	8.4%
Industrial Products	
<ul style="list-style-type: none"> Products manufactured for export e.g. canned pine-apple, electronical equipments, garment, furniture parts and gloves. 	16.0%
<ul style="list-style-type: none"> Products with export potential e.g. sugar, cement, cotton yarn, cotton cloth and fibre, canned fruits and vegetable, sanitation equipments. 	8.9%
<ul style="list-style-type: none"> Products of cottage industries e.g. wood carving, Thai silk, gems. 	10.9%
Mineral Products e.g. tin, fluorite, barite, wolfram, manganese, antimony.	4.5%

In setting export targets for agricultural products, it is assumed that the output of major exports will be increasing at a normal rate except tapioca in which the cultivated area will be limited from further expansion beyond the level attained at the end of the Third Plan. The decreasing rate of tapioca output expansion is deemed desirable in view of its repercussion on environmental conditions and the need to prevent an over supply situation. In addition, the expansion of tapioca output so far, particularly in the Northeast has been responsible for a significant decline in kenaf

production. Hence, if tapioca output should be allowed to increase at the previous rate, there would not only be inadequate supply of kenaf for export but domestic requirement would not be met in future. The highest rate of export expansion is envisaged for tobacco, shrimp, squid, mungbean and fresh vegetables in which there is good prospect for export if the output could be substantially increased. For other products in which a market exists, such as sorghum, bean, and cattle, government support will be given to induce further expansion into such markets. It is expected that if the prices of these commodities in the world market are favourable, total output can be expanded beyond the envisaged targets.

Rather ambitious targets have been set for industrial exports, particularly in industries with relatively large productive capacities. In addition, if investments in the industrial sector are made in accordance with the industrial development strategy, increased earnings from industrial exports can be attained. In other words, changes in export structure through diversification into new products can be responsible for addition export earnings which could exceed envisaged export targets. The export target for minerals has been derived from the envisaged growth rate of mineral production under the assumption of some market expansion. However, in the case of wolfram, demand in the world market for this mineral product assumed to remain constant.

As for the export of services, it is estimated that the receipt from tourism will increase at an average of 16 per cent per annum. The number of tourists is expected to increase at a minimum rate of 11 per cent per annum. Meanwhile, incentives have to be provided to encourage an increase in tourist expenditure per head.

As for other services, particularly international shipping, measures will be undertaken to improve the country's commercial fleet to serve Thailand's international trade to a greater extent.

2.2.2 Import Targets

Merchandise imports at market prices derived from the above mentioned production targets is expected to increase at 11.5 per cent per annum. This rate of import increase is considered to be essential for the maintenance of national economic stability.

The envisaged rate of increase in imports consists of an increase in import volume of 6.1 per cent per annum and an increase in import price of 5 per cent per annum. With respect to the volume of imports, the target rates of increase for major imports are as follows:—

Table 3.2
Target Rate of Increase in the Volume
of Major Imports

Import Item	Target Rate of Annual Increase (%)
Consumer Goods	0.7
Raw Materials for the Production of Consumer Goods	5.4
Capital Goods and Raw Materials for the Production of Capital Goods	7.5
Fuel and Lubricants	7.7

The value of service imports at market prices is expected to increase at the rate of 11.1 per cent per annum which is lower than service exports. Major emphasis will be put on encouraging a greater degree of utilization of domestic shipping services. In addition, measures will also be undertaken to limit foreign traveling by Thai citizens to an appropriate level in order to save foreign exchange.

2.3 Investment Targets

To encourage faster economic recovery, total investment must expand at an average rate of 7.2 per cent per annum in real terms or 12 per cent per annum in current prices. In other words, the total value of fixed capital formation during the Plan period must increase to 564 billion bath in order to achieve the overall growth at 7 per cent per annum.

Of the total amount of fixed capital formation, about 72 per cent will be derived from private capital formation and 28 per cent will be derived from public capital formation. Or looking at this from another angle, 69 per cent of total fixed capital formation will be accounted for by domestic capital formation and 31 per cent from foreign capital formation. Of the total foreign capital formation, about 82 per cent is expected to be contributed by private direct investments in the form of loans and long term credit, another 18 per cent will be forthcoming from the Government and public enterprises in the form of loans to finance various development projects.

So that the total investment target can be reached particularly with respect to domestic and foreign private investments, the Government has to improve the overall investment climate to restore the confidence of private investors. At the same time existing laws and regulations concerning investment have to be reviewed along with the expansion of industrial infrastructure and improvement of labour relations.

Table 3.3
Investment Targets (At current prices)
(Million Baht)

	1977	1978	1979	1980	1981	Total	Average Annual Growth
Gross Fixed Capital formation							
(at Market prices).	88,117	99,205	111,299	124,980	140,271	563,872	12.8
– Private	63,345	70,643	79,829	90,138	103,898	407,853	12.3
– Public	24,772	28,562	31,470	34,842	36,373	156,019	14.6
Foreign Capital Inflow.	28,632	31,545	34,853	37,968	40,117	173,115	8.8
– Private Inflow	24,460	26,138	28,074	30,218	32,621	141,511	7.2
– Direct Investment	4,250	4,950	5,800	6,750	7,900	29,650	16.4
– Loans and Long Term Credits	7,100	7,750	8,500	9,350	10,250	42,950	9.5
– Others	13,110	13,438	13,774	14,118	14,471	68,911	2.5
Public Inflow of capital	4,172	5,407	6,779	7,750	7,496	31,604	18.6

2.4 Economic Stabilization Policy

The maintenance of economic stability is one of the vital policies for economic growth and the realization of income distribution. Major targets with respect to economic stabilization policy are as follows:—

2.4.1 Balance of Payments

Over the Plan period, the total balance of payments surplus is projected at 5,842 million baht representing an average increase of 4.7 per cent per annum. This amount of surplus will give rise to an accumulation of international reserves to a level sufficient to finance 3 months' imports by the end of the Plan period. This balance of payments target will contribute to economic stabilization policy. To achieve this target, it is necessary to implement import substitution, export promotion as well as investment and fiscal plans simultaneously

2.4.2 Money Supply Expansion

Total money supply is projected to grow at an average rate of 13 per cent per annum during the Fourth Plan period. This target should help to limit the annual rate of domestic inflation to 6 per cent or less as well as to allow for overall output expansion at 7 per cent per annum.

2.4.3 General Price Level

In view of the Fourth Plan's policy to raise the price level of agricultural commodities particularly paddy, the target for price level increase is 6 per cent per annum. This rate of increase is consistent with the targets to raise the retail price for rice at approximately 5 per cent per annum and to increase the level of paddy prices at about 6.5 per cent per annum.

The target change in the domestic price level at 6 per cent per annum was derived from the assumption that the domestic price of oil, which is significantly influenced by world crude oil prices, will not increase above the normal rate of 5.9 per cent per annum.

Table 3.4
Economic Stabilization Targets

	1977	1978	1979	1980	1981	Average Annual Increase (%)
- Change in Reserves (Millions of Baht)	- 2,482	- 1,508	1,263	3,605	4,964	4.7
- Total Money Supply Expansion (Million Baht)	4,615	5,170	6,455	7,355	8,510	13.0
- Consumer Price Index for whole Kingdom (1965 = 100)	199	211	224	237	235	6.0

2.5 Fiscal Targets

Fiscal targets are set to maintain domestic economic stabilization policy, to enable the expansion of the economy at the annual average growth of 7 per cent per annum and to support the income distribution objective of the Plan.

2.5.1 Expenditure Target. Government expenditure during the Plan period is projected to expand at a minimum rate of 11.2 per cent annually with the general price level increase of 6 per cent per annum.

2.5.2 Budget Deficit Target. To allow for an expansion of money supply at a maximum average rate of 13 per cent per annum, the budget deficit on a cash basis in each year is set in the range of about 11,800–14,700 million baht. This means that money supply expansion of the public sector has to be maintained at an average rate of less than 19 per cent of the total budget expenditure. Most of the deficit will be financed by private financial institutions. If necessary, remainder will come from the Bank of Thailand and the Treasury balance. If this budget target can be achieved, it will be possible to maintain the Treasury balance at the level of about 7,000–10,000 million baht over the Plan period.

2.5.3 Revenue Target. In order to increase the rate of government expenditure at 11.2 per cent per annum and to maintain money supply expansion at a manageable level, public revenue has to be increased at the minimum rate of 15.1 per cent per annum according to the targets set in Table 3.5

Table 3.5
Plan Targets for Public Development Expenditures and Financing
(Million Baht)

	1977	1978	1979	1980	1981	Annual Average Increase (%)
Expenditure Targets						
— Budget Expenditures	68,790	78,520	85,955	95,205	106,130	11.2
— Actual Disbursement (% of total expenditures)	80	81	82	83	84	—
— Cash expenditure during each fiscal year (including carry over from the previous fiscal year)	62,870	72,570	80,515	89,565	99,600	12.4
Budget Deficit Target						
— Cash Deficit	12,660	15,210	12,080	12,500	11,590	-0.5
Revenue Targets						
— Revenue of Taxation at Normal Rate of Increase	44,362	51,070	58,790	67,680	77,915	15.1
— Revenue from Public Enterprises and Others	4,319	3,790	4,250	4,495	4,616	-1.1
— Revenue from New Direct Taxes to be collected in 1977	1,770	2,010	2,240	2,550	2,900	^{1/} 13.1
— Revenue from Improvement of Tax System and Tax Administration	—	1,300	1,900	2,400	2,700	—
Total Revenue	50,451	58,170	67,180	77,125	88,131	15.1

^{1/} 4 years Average

3. New Integrated Development Strategies

To achieve the already stated national development objectives, the following are 10 integrated development strategies to be adopted by the Government during the Plan period.

3.1 To Accelerate Agricultural Output Expansion at a Minimum Rate of 5 Per Cent Annually

In order to raise rural income and employment, it will be necessary to promote agricultural diversification, to accelerate productivity in areas with high development potential as well as in depressed agricultural areas.

An integrated approach to accelerate agricultural development will be an important strategy of the Plan. This will include the improvement of on-farm irrigation, the expansion of agricultural credit, the provision of needed inputs such as fertilizer, the extension of new production techniques including provision of improved seeds as well as the promotion of farmer and rural organizations.

3.2 To Improve the Industrial Structure for Expanding Exports, Improving Income Distribution and Increasing Rural Employment

During the Fourth Plan period it will be the Government's development strategy to promote export industries, agro-industries as well as industries utilizing indigenous natural resources which will create income and employment for the majority of the people.

In implementing this strategy, measures will be taken decentralize industries from the Bangkok Metropolitan area to other regions. Meanwhile, favourable investment climate will be created to restore investor confidence through the establishment of a definite and clear cut overall investment policy, the creation of labour content and improvement of industrial wage structure consistent with productivity increases, the reform of the Government administrative set up procedures on industrial development and investment promotion and the revision of conflicting policies among various government agencies.

3.3 To Formulate Trade Plan for the Acceleration of Industrial Exports and for the Production of Import Substitutes Based on Domestic Resources

Trade planning for accelerating industrial exports will be carried out on a commodity by commodity basis consistent with production and demand as with the establishment of domestic price policy and the identification of markets for each category of export commodities. In addition, an adequate number of export processing zones must be established. For this purpose, it is necessary to formulate guidelines for effective coordination between production and marketing and between the public and private sectors. At the same time, a plan for import substitution consistent with investment policy on the expansion of domestic agricultural and industrial production must be formulated. In addition a solution to the problem of long term trade deficit must be found. With respect to services, a plan for promoting tourism will have to be

systematically formulated in conjunction with the export plan in order to increase foreign exchange earnings. Among the more important measures formulated for promoting tourism include the development of additional tourist areas and the provision of necessary facilities. Efforts will also be made to persuade mass media abroad not to exaggerate news which subtract from Thailand's favourable climate for tourism.

3.4 To Establish Regional and Urbanization Strategies

Regional and spatial considerations will be taken as explicitly into account for formulating policies and programmes concerning production diversification, income generation, the decentralization of industries and employment to various regions of the country. At the same time, regional urban centres will be established to serve as an economic base for each region and to check migration into the Bangkok metropolitan area in the long run together with the newly formulated Bangkok metropolitan improvement plan. In addition, special programmes will be designed for the depressed areas of each region.

3.5 To Accelerate Decentralization of Basic Economic Services

Particular emphasis will be placed on the expansion and decentralization of public utilities, transportation, communications and electricity services to rural areas in order to support production and improve the quality of life. Plans for coordinating the distribution of these services within each sector and between various sectors will be drawn up. Pricing policies related to the provision of public utilities will also be revised to promote a better income distribution and to give a fairer deal to rural producers.

3.6 To Support and Accelerate Programme for the Reduction of Population Growth from 2.5 Per Cent in 1976 to 2.1 Per Cent by the End of the Fourth Plan in 1981

Efforts will be made jointly with the private sector to achieve this target of providing family planning services to 3.03 million new acceptors during the Plan period. Important measures will include the provision of education (population education), the revision of laws relating to this topic as well as the distribution of family planning services to people in remote areas, urban slum areas and areas with high man land ratios. In summary, the family planning strategy during the Fourth Plan will place considerable emphasis on implementing significant measures in addition to the provision of medical services.

A major target relating to employment is to create 2.2 million more jobs during the Fourth Plan period. This means increasing the total number employed from 18.2 million persons in 1976 to 20.4 million persons in 1981. In order to maintain a minimum unemployment rate at 6 per cent of the total labour force, urban employment will have to increase 4.6 by per cent per annum or from 2.4 million jobs

in 1976 to 3.01 jobs in 1981. Rural employment will have to increase by 2 per cent per annum during the plan period, or from 15.8 million jobs in 1976 to 17.4 million jobs in 1981. To achieve these employment targets the Government will adopt the strategies outlined for agricultural and industrial development in Bangkok and the provinces. Also, priority will be given to the implementation of programmes, projects and measures which have been formulated for alleviating seasonal unemployment and underemployment problems in order to check migration into the Bangkok area, with particular emphasis on the revision of minimum wage rate structure.

3.7 To Accelerate Decentralization of Social Services to Reach More People in the Rural and Remote Areas

Planning for the distribution of education, public health, social welfare and nutrition services to rural areas will be implemented in an integrated way so as to achieve the Fourth Plan objective of rural development and income distribution as well as the reduction of disparity in the provision of social services between urban and rural areas.

To this end, educational development plan will be reformed and implemented in accordance with the plan and the changing economic and social situation. Efforts will be made to extend educational services to rural areas more effectively so that those living in rural areas will have a better chance of getting basic education. On public health service, programmes to provide free medical care to poor people will be expanded. With respect to social welfare, major emphasis will be placed on the provision of welfare services to those with particular social problems and such target groups namely hilltribes, old people, the disabled, slum dwellers and prisoners.

On the welfare of workers, programmes and projects for the improvement of working conditions and security will be implemented along with measures to create a better understanding and more cooperation on the part of the employers.

3.8 To Promote Social Stabilization

The status of women and youth will be strengthened to play a more important role in national development. Measures will also be undertaken to solve the increasing social problems such as juvenile delinquency, crime, the deterioration of public mental health as well as drug addiction. These problems will receive as much attention as the development of economic stability.

3.9 To Establish Programmes for Natural Resource Rehabilitation and Management, as well as Environmental Development

Measures will be undertaken to manage the utilization of the basic natural resources such as land, water resources, forest areas and minerals in such a way as to prevent rapid depletion and to promote more efficient use and returns to the public. Programmes will also be established to rehabilitate natural resources which

have been rapidly deteriorated and affected environmental balance to meet requirements for future development. Systematic and consistent development will also be undertaken in the fields of land reform, land development, forest conservation and forest resources rehabilitation as well as the exploration of petroleum and natural gas in the Gulf of Thailand and along the Western coast of the Southern region.

3.10 To Develop Science and Technology

Potential in the field of science and technology will be mobilized to support the achievement of the Fourth Plan targets on productivity increase, exports and production diversification. Various government science and technology organizations will be strengthened to promote new scientific and technological inputs which are appropriately useful and applicable to the national economic, social and environmental conditions. Priority will be given to the adoption of appropriate technology to agriculture and industry for the benefit of the public.

In order to implement the new integrated development strategies of the Fourth Plan effectively, the Government will have to improve the coordination among various machineries responsible for the overall management of national economic policies particularly agencies concerned with national planning, budgeting and personnel administration. This improvement will enable the various implementing agencies to adopt major government's policies and translate these policies into effective action programmes. In addition, such change would help in the monitoring and controlling of implementation of development activities in accordance with Plan targets. To this end, the authority and responsibilities of the agencies involved as enacted by laws will have to be revised accordingly. In addition, organizational improvement will also have to be undertaken at the ministerial level for better coordination among various economic ministries and to provide more effective and timely services on the promotion of production and marketing to the private sector. Revisions have also to be made on existing laws and regulations so that the business community can operate efficiently and with more confidence in the future of the national economy.

Meanwhile, the Government will establish measures to discourage monopolistic practices in trade and production. In addition, the role of public enterprises involving the production, distribution and development of resources will have to be improved further so that it can support income distribution goals and employment generation during the Plan period.

PART TWO

THE OVERALL DEVELOPMENT STRATEGY

CHAPTER I

ACCELERATION OF ECONOMIC RECOVERY IN 1977-1978

During the first two years of the Fourth Plan, high priority has to be given to the solution of immediate problems particularly those related to the economic recession and the depressed investment climate. The acceleration of economic recovery is thus deemed to be a pre-requisite for the establishment of a viable development base from which other problems can be tackled effectively during the succeeding period. To this end, the Government will adjust many policies and measures essential for the expansion of production, income and employment during the period of 1977-78. If these short-run goals are not achieved, further efforts to restructure the economy as laid down by the Plan may not amount to much and as such, the country's future, in terms of social and political stability, may be jeopardised.

By the end of 1976, the Thai economy had not yet fully recovered from the recession. It is expected that the overall increase in production will not exceed 6 per cent in 1976 as a result of unfavourable weather conditions which affected agricultural production. No significant increase in industrial investment was recorded except for investment in certain small scale industries. Other indicators of economic stagnation include export statistics. Despite the increase of certain export items, there are still many export commodities such as sugar, textiles and gunny bags which in 1976 are facing sharp decrease in prices and demand. In addition, by the end of 1976, the unemployment rate was still high, at about 1.05 million persons. These statistics indicate that the Thai economy has not yet fully recovered from the recession which began in 1974. Without immediate action, this situation will continue into 1977 and 1978 of the Fourth Plan period.

For this reason, one of the vital strategies of the Fourth Plan aim at the acceleration of economic recovery during the first two years of the Plan. The following are policy guidelines proposed for the acceleration of private investments in industries, commerce and exports, for the stimulation of employment expansion and for encouraging public investment. Fiscal measures and the improvement of government services are also included.

1. Strategies for the Acceleration of the Industrial Investment

The main emphasis during the first two years of the Plan has to be devoted to the acceleration of industrial investment including the expansion of existing capacity and the establishment of new industries by Thai and foreign investors. Strategies and policy measures essential for short term improvement of the investment climate include the following.

1.1 The Government will give reassurance to foreign investors on its policy to support and facilitate further expansion in foreign investment in a fair and equitable manner and to refrain from nationalizing private undertakings. At the same

time, clarification will be given to eradicate uncertainties over the Government's attitude towards private investment which arose from the dispute between two airline companies Air Siam and Thai International and from the replacement of Thailand Exploration and Mining Company (TEMCO) by the Off Shore Mining Organization after the cancellation of its mining concession.

1.2 The Government will identify specific undertakings which will be reserved entirely for investment by Thai nationals. The areas in which foreign investment will be welcomed in particular will also be designated. These areas include investment in capital intensive, technological advanced and export oriented industries such as mining, mineral processing and the production of chemicals, petroleum products, petrochemicals as well as paper and pulp. In addition, the Government will express its willingness to undertake joint ventures with foreign investors in some projects which have special importance for the national economy. The Government will spell out clearly its policy to sell stocks to domestic investors when these joint enterprises achieve operational efficiency.

1.3 The Government will speed up the project cycle so that some of the more important industrial projects which have already received promotional privileges but await final approval from implementing agencies can get started. These projects include the production of pulp and paper which awaits a concession on forest land, mineral smelting and many other large scale industries. The implementation of these projects is considered to be essential in view of the need to improve the overall investment climate and restore the confidence of private investors.

1.4 Foreign investment promotion will be consistent with Fourth Plan objectives on employment expansion, income distribution and the development of indigenous natural resources. Thai people will be encouraged to invest in joint ventures and to absorb new technology and management techniques to a greater degree.

1.5 Existing infrastructural facilities such as those available at Bangchan industrial estate should provide additional incentives for the investment projects that have already received promotional privileges as well as projects which are applying for promotional privileges. In addition, various government agencies concerned with the provision of basic services to facilitate foreign investors will be encouraged to expand their services more effectively particularly with respect to the construction of factory buildings, the installation of electricity, water supply and telephone lines as well as more rapid customs clearance of imported machineries.

1.6 Economic policies relating to or conflicting with investment promotion and the viability of domestic industries will be reviewed. The measures that will be reviewed in particular include the protection of industries by increasing custom duties on imported products which can be produced domestically, improving price controls as well as export facilitation measures. Policies relating to the granting of concessions and the management of natural resources, particularly minerals and forests, will be made more consistent with the promotion of industrial investment objective.

1.7 The Government will encourage more long term financing of industrial projects by the Bank of Thailand, Industrial Finance Corporation of Thailand (IFCT),

small-scale Industries Financing Office (SIFO) and other financial institutions. To stimulate further investment expansion, financial institutions will be encouraged to revise their lending policies so that the economic, financial, technical and administrative soundness of projects is given more importance in loan decisions rather than the quality of collateral that can be provided by potential borrowers. To this end, an Industrial Development Credit Fund will be established to cooperate with IFCT and SIFO in financing feasible projects, submitted by potential investors who do not have sufficient collateral for obtaining loans. In some cases, the Government may have to provide a guarantee on loans for the financing of necessary industrial projects which have a high rate of economic return. In order to accelerate further investment expansion, investment promotion policy should be adjusted so that promotion privileges provided in Thailand offer potential investors advantages comparable to or more favourable than privileges offered in neighbouring countries.

1.8 More information in various forms will be disseminated to help foreign investors understand the current economic situation in Thailand as well as investment opportunities that exist in this country.

2. Improvement of Policies on Price Control and Export Promotion

There is a consensus among industrialists that existing controls on prices are detrimental to the expansion of domestic investment. This is due to the fact that the Government has no definite set of criteria for selecting commodities which will be subject to price control. Moreover, price control is usually considered to be unfair and inconsistent with the production costs which have been changing rather rapidly. Also, no time limit on the enforcement of price control has been specified so far. Hence, many investors have to wait for a more definite government policy on this matter before expanding their activities or undertaking new investment. To rectify this situation, certain policy guidelines for the operation of the Anti-Profiteering Committee to protect the interests of consumers and for the promotion of investment have been formulated. These guidelines include the following.

2.1 A review of commodities under price control at present should be carried out to fix fair prices for both producers and consumers. Price control on certain commodities which are already competitive in the market should be abolished. In future, direct control on prices should be avoided. More effective indirect measures such as fiscal and export controls should be applied instead.

2.2 In the case that direct price control has to be imposed to prevent over profiteering, the following set of criteria should be used as guidelines.

(1) That particular commodity is essential for the basic livelihood of the public in general.

(2) The nature of production and distribution of that particular commodity does not permit domestic or foreign competition to an effective degree.

(3) There is enough evidence to substantiate that returns on production of that commodity are abnormally high.

(4) In emergency situation, the Anti-Profiteering Committee can impose price controls on commodities whose price have risen at an unusually high rate.

2.3 In fixing the ceiling price for controlled commodity, it has to be taken into consideration that the rate of return from investment in industries in which price control is imposed is as high as in other industries.

2.4 Price control on commodities should be valid for a period not exceeding six months. Further extension then can be considered if deemed necessary.

2.5 The composition of the Anti-Profiteering Committee should be improved to include some experienced businessmen from the private sector.

2.6 Short term measures proposed for accelerating exports for stimulating economic recovery include the following:

An export plan will be formulated incorporating programmes on market expansion, export incentives as well as proposals for integrating work on export promotion, research, dissemination of business information and the control of the quality of export products for the benefit of both producers and exporters. To this end, it may be necessary to set up an institution for carrying out or coordinating the activities now being performed by various export promotion agencies to work in conjunction with industrial promotion agencies as well as private institutions concerned. The details of this arrangement are presented in chapter 4.

Export refund procedures will be streamlined to distribute benefits more equitably among various industries and corporations. Support will also given to the establishment of a large-scale exporting company in order to stimulate agricultural and industrial exports.

3. Improvement of Labour and Employment Policies

To accelerate economic recovery, various policies and measures relating to labour and employment have to be implemented. The main policies and measures in this field include the following:

3.1 Peaceful harmonious labour-management relations will be promoted through strict enforcement of relevant laws in the settlement of industrial disputes. The Government will persuade workers to abide by the law and to refrain from taking any drastic action which might be harmful to public lives and property in the case of strikes.

3.2 Employers will be encouraged to improve the standard of living and the provision of welfare services to workers. At the same time, more housing should be provided to low income workers.

3.3 An organization will be established to provide a forum for continuing discussion between employers and the labour council to create mutual understanding. In addition, employers, workers and the Government should express their joint intention for the improvement of overall investment climate.

3.4 The Government will give priority to projects which generate additional employment and labour intensive schemes such as road repairing and the

excavation of irrigation canals and housing construction in both rural and urban areas. The Government's labour intensive projects in rural areas, particularly reforestation and other public works will be implemented during the dry season from March to May.

3.5 The Investment Promotion Act will be revised to give more incentives to investment in labour-intensive industries. More information on the possibilities and viability of adopting labour-intensive techniques of production will be provided to investors. Small-scale labour-intensive industries will receive additional privileges as that they can compete more effectively vis-a-vis large-scale industries.

3.6 Agencies concerned with labour management will be promoted and strengthened. This includes the establishment of a labour court and the expansion of existing agencies in terms of manpower and functions.

3.7 Various government agencies and public enterprises will be encouraged to fill existing staff vacancies.

4. Acceleration of production and Agricultural Prices Stabilization

To achieve a rapid economic recovery, it is necessary to strengthen production base in the major economic sectors, particularly the agricultural sector. In this matter, short-term policies include the following :-

4.1 Land reform will be undertaken on an accelerated basis to provide a more solid base for agricultural development. Major emphasis at the initial stage will be placed on the improvement of land ownership among landless farmers, small holders or tenants. At a later stage, the improvement of agricultural resources will be undertaken along with the provision of additional inputs for production and other essential services.

4.2 On-farm development projects will be expanded and implementation will be speeded up with full financial support from the Government. Relevant agencies will be encouraged to implement on-farm development projects more rapidly.

4.3 Special government assistance to poor farmers in certain parts of each region will be given through the formulation of agricultural development projects for particular areas in order to alleviate the difference in standards of living among farmers.

4.4 Credit to rural areas must be expanded immediately. Existing credit institutions must be reorganized and expanded to cope with a higher level of credit disbursement as well as more varied facilities. The provision of short and long term credit has to be identified more clearly.

4.5 A buffer stock for paddy will be established as a machinery for stabilizing the prices of rice and paddy and designed so that it is consistent with other related government measures.

4.6 Farmers will be encouraged to organize themselves into farmers institutions on a wider basis in order to absorb government services that are provided more effectively. Existing farmers institutions will be developed stage by stage from

farmers' groups into agricultural cooperatives. The expansion of farmers' institutions will be subject to efficiency considerations. In addition, the expansion of cooperative activities is viewed as a major tool for agricultural development in which particular emphasis will be placed in the area under land reform.

4.7 Agro-industries will be promoted and investors will be encouraged to establish agro-industrial plants in provincial areas to support the industrial decentralization objective. Special measures will be taken to accelerate the commencement of projects which have already been formulated.

5. Fiscal Measures and the Improvement of Government Services

The followings fiscal measures and government services will be improved so as to facilitate investment expansion.

5.1 Changes in the tariff structure will be made to provide a more equitable rate of protection among industries.

5.2 Various products will be classified into homogenous groups and customs duties will be revised so that similar products are subject to similar rates. Investors in similar product lines would then be put on a more equal footing in terms of fair competition. In addition, efforts will be made to eliminate double taxation.

5.3 Administrative and operational procedures of the Ministries of Finance and Commerce will be streamlined with respect to certain operations such as the setting up of a tariff wall and the imposition of export or import prohibitions can be implemented with more flexibility.

5.4 More effective measures for suppressing smuggling activities will be taken so that honest industrialists get a fairer deal. At the same time, the set of punishment for tax evasion will be revised by taking into consideration whether the tax was evaded deliberately or unknowingly due to ambiguity in the laws relating to taxation.

5.5 A One-Stop Service Centre will be set up to provide facilities for registering applications for various permits and licenses as well as applications for promotional privileges.

5.6 The Immigration Act and the Decree of the Revolutionary Party on Alien Works Permit which cause inconvenience for foreign investors will be revised.

5.7 Particular attention will be given to the presentation of various news items relating to differing events and situations in Thailand to prevent news distortion which might damage Thailand's image and discourage foreign investment. Official news will be released to the mass media as quickly as possible.

CHAPTER II

PLANNED ECONOMIC STRUCTURE AND MAJOR TARGETS

1. The Major Overall Targets

Efforts to promote economic and social development during the Fourth Plan will be made in accordance with the objectives and strategies specified in Part I. The major overall targets are as follows:

1.1 Gross Domestic Product Target

The target rate of GDP growth is 7 per cent per annum in real terms. Special emphasis is put on the expansion of the agricultural sector at 5 per cent per annum to generate more income in rural areas. Population growth rate will be reduced to 2.1 per cent per annum by 1981. This means that by 1981, if the GDP and population growth rate targets are achieved, per capita income can increase by 4.5 per cent.

1.2 Gross Domestic Expenditure Target

During the Fourth Plan, investment expansion is set at 7.2 per cent per annum in real terms. Public and private investment expenditures are expected to increase by 8.1 per cent and 7 per cent per annum respectively. In addition, consumption expenditure is projected to increase by 6.6 per cent per annum. These expenditure targets are consistent with the income and production targets which have been projected to increase by 7 per cent per annum during the Plan period.

1.3 Economic Stability Target

The consumer price index is projected to increase by not more than 6 per cent per annum. Efforts will be made to maintain international reserves at a level which is both sufficient and conducive to national economic development. By the end of the Fourth Plan period international reserves should be sufficient to cover import payments for at least three months. This is considered necessary for maintaining stability in Thailand's external trade and payments position.

The acceleration of economic recovery during the first two years of the Plan is a pre-requisite for the achievement of the macro targets presented above. Many economic and investment policies have to be adjusted to bring about the structural changes envisaged in Part III. These changes are necessary to ensure that the economy expands in such a way and at such a rate that facilitate a fairer distribution of development benefits to rural areas of the country in particular.

More details on the production, income, expenditure and economic stabilization targets mentioned above are presented in the following paragraphs:—

2. Production Targets

During the Plan period, Gross Domestic Product is projected to increase at a rate of 7 per cent per annum in real terms. At the same time, the target growth rate for agricultural production is set at 5 per cent per annum, while the target for non-agricultural production has been set at 7.6 per cent per annum. The achievement of these production targets would bring about significant changes in the structure of the economy and a better sectoral balance in development. By the end of the Fourth Plan, the relative share of agricultural and non-agricultural output in GDP will be more balanced.

A breakdown of these sectoral production targets is shown in table 2.1. More detailed explanations of the main components of these sectoral production targets are presented below:-

2.1 Agriculture

The target rate of output expansion at 5 per cent per annum is rather high, compared with the rates of increase in the past. Nevertheless, this target rate of increase is necessary, in view of the need to distribute development benefits to rural areas and to raise the living standard of farmers in accordance with the plan objective. In addition, agriculture plays an important role in Thailand's export performance and supplies basic inputs for other production sectors in the economy. Hence it is necessary to accelerate agricultural production at a rate that is high enough to sustain a rate of export growth of 14 per cent per annum in nominal terms. Detailed production targets classified by activities and crops taking cultivated area and productivity constraints into account are presented in Chapter 2 of Part III of this plan document. In addition, a summary of projects and programmes which are important instruments for achieving these targets are presented in Part IV.

2.2 Mining and Quarrying

Total output in the mining and quarrying sector is projected to increase at a rate of 3.2 per cent per annum. In setting this target, consideration has been given to existing supplies of mineral deposits, foreign demand and the policy to conserve some mineral deposits as reserves for the future.

2.3 Manufacturing

The target for manufacturing output expansion is set at a rate of 9.6 per cent per annum which is higher than the envisaged GDP growth rate. This has been done to accelerate economic recovery, to absorb labour from the agricultural sector and to maintain industrial exports at a rate which is not less than the rate achieved during the Third Plan. In order to achieve this target growth rate, output expansion in the import substitution industries, agro-industries, and labour-intensive small scale industries in particular have to be accelerated.

2.3 Other Sectors

The targets for output expansion in other sectors have been set using different sets of variables. This is outlined belows:-

2.4.1 Construction

The target growth rate of 3 per cent per annum is based on the public investment expenditure projection which in turn was derived from the development expenditure target.

2.4.2 Electricity and Water Supply

The target growth rate for this sector is based on the existing production capacity of the enterprises producing such public utilities and the envisaged expansion in production capacity during the Fourth Plan.

2.4.3 Transport and Communication

Projected rate of expansion in this sector is based on the national growth rate, various basic factors in the transport and communication sector and the policy relating to the expansion of national merchant shipping.

2.4.4 Wholesale and Retail Trade

The projected growth rate here is based on the overall growth rate and the target for international trade expansion.

2.4.5 Banking, Insurance and Real Estate

Projected growth rate for this sector is based on fiscal and credit expansion targets are presented in chapter III.

2.4.6 Ownership of Dwellings

Projected growth rate is set in accordance with demand for housing, the rate of urbanization as well as assumptions relating to the implementation of the Government's housing projects during the Plan period.

2.4.7 Public Administration and Defence

Projected growth rate here is based on fiscal targets and the expected expansion of government administrative and defense activities during the Plan period.

2.4.8 Services

The target growth rate here is based on the projected expansion in the tourist sector and expected increases in the number of hotel rooms and restaurants.

Table 2.1
Production Targets Classified by Sector
(At constant prices)

<div> <div>Time</div> <div>Sector</div> </div>	Third Plan Period					Fourth Plan Targets		
	1971		1976		1972-76 Average Annual Increase	1981		1977-81 Average Annual Increase
	Value (million baht)	%GDP	Value (million baht)	%GDP		Value (million baht)	%GDP	
1. Agriculture	38,145	29.4	46,113	26.4	3.9	58,706	23.9	5.0
2. Industry	23,569	18.2	35,575	20.3	8.6	56,277	22.9	9.6
3. Mining & Quarrying	1,879	1.4	1,762	1.0	-0.5	2,066	0.8	3.2
4. Construction	6,210	4.8	6,951	4.0	2.4	8,059	3.3	3.0
5. Electricity & Water Supply	2,934	2.3	5,737	3.3	14.4	9,794	4.0	11.3
6. Transport & Communication	7,981	6.2	11,780	6.7	8.1	16,857	6.9	7.4
7. Wholesale and Retail Trade	22,816	17.6	28,792	16.5	4.8	39,080	15.9	6.3
8. Banking, Insurance and Real Estate	5,297	4.1	8,852	5.1	10.9	13,063	5.3	8.1
9. Ownership of Dwellings	2,399	1.9	2,861	1.6	3.6	3,555	1.4	4.4
10. Public Administration and Defence	5,647	4.3	7,546	4.3	6.0	10,331	4.2	6.5
11. Services	12,740	9.8	18,897	10.8	8.2	27,470	11.2	7.8
Total Non-agricultural Sectors	91,472	70.6	128,753	73.6	7.1	186,552	76.1	7.7
Total Agricultural Sector	38,145	29.4	46,113	26.4	3.9	58,706	23.9	5.0
Gross Domestic Product	129,617	100.0	174,866	100.0	6.2	245,258	100.0	7.0

Table 2.2
Major Production Targets

	1977	1978	1979	1980	1981	Annual Average Increase
(a) Agriculture						
- Crops						
Rice (million ton)	15.4	15.6	15.9	16.2	16.5	2.3
Sugar Cane (million ton)	21.9	23.6	25.3	26.9	28.6	7.2
Maize (million ton)	3.5	3.6	3.6	3.7	3.8	9.8
Tapioca (million ton)	9.8	10.0	10.3	10.5	10.8	3.2
Rubber (Thousand ton)	407	421	436	450	466	3.4
Jute (Thousand ton)	220	220	220	220	220	3.3
Virginia tobacco (Thousand ton)	44.7	49.2	54.1	59.5	65.5	9.9
Mung Bean (Thousand ton)	292.5	306.0	333.2	353.2	390.4	8.9
Soy Bean (Thousand ton)	310.0	327.6	351.1	387.7	431.2	8.3
Cotton (Thousand ton)	63.0	76.0	115.5	149.5	205.0	28.6
- Livestock (at constant prices, million baht)	6,913	7,539	8,212	8,932	9,709	8.9
- Fisheries (at constant prices, million baht)	4,769	4,927	5,092	5,274	5,464	3.4
- Forestry (at constant prices, million baht)	2,951	2,991	3,028	3,064	3,098	1.3
(b) Industry						
Sugar (Thousand ton)	1,622	1,742	1,863	1,983	2,103	5.6
Cement (Thousand ton)	4,533	4,850	5,190	5,553	5,942	7.0
Textiles (million square yard)	1,115	1,203	1,291	1,378	1,525	10.4
Iron and Steel (Thousand ton)	482	535	592	652	714	10.5
Paper and Pulp (Thousand ton)	297	363	429	495	563	19.5
Fruits and Canned Vegetables (Thousand ton)	53	61	68	76	84	12.8
Animal Feed (Thousand ton)	1,177	1,530	1,989	2,586	3,362	30.0
Condensed Milk (Thousand ton)	106	111	117	124	131	5.4

	1977	1978	1979	1980	1981	Annual Average Increase
(c) Mining						
Tin (ton)	29,100	30,100	31,100	32,100	33,100	3.2
Manganese (ton)	32,050	33,690	33,330	33,970	34,610	2.3
Fluorite (ton)	285	282	280	280	280	-0.6
Antimony (ton)	9,000	9,400	9,900	10,500	11,000	5.9
Tungsten (ton)	4,100	4,600	5,100	5,600	6,100	11.2
Barite (Thousand ton)	269	308	346	385	431	13.4

3. Expenditure Targets

In order to attain the projected growth rate of GDP at 7 per cent per annum, expenditure targets in the investment, consumption and foreign sectors must, of course, be consistent with each other. The following table presents the Plan's targets for these sectors.

Table 2.3

Investment, Consumption, and Foreign Sector Expenditure Targets
(at constant prices)

Categories	Third Plan Period					Fourth Plan Target		
	1971		1976		1972-76 Average Annual Increase	1981		1977-81 Percentage Annual Increase
	Value (million baht)	% of GDP	Value (million baht)	% of GDP		Value (million baht)	% of GDP	
1. Investment Expenditure	29,864	23.0	39,680	22.7	5.9	56,158	22.9	7.2
1.1 Public	9,463	7.3	9,630	5.5	3.5	14,060	5.7	8.1
1.2 Private	20,401	15.7	30,050	17.2	8.4	42,098	17.2	7.0
2. Consumption Expenditure	102,743	79.3	137,289	78.5	6.1	189,306	77.2	6.6
2.1 Public	14,772	11.4	21,037	12.0	7.5	28,496	11.6	6.3
2.2 Private ^{1/}	87,971	67.9	116,252	66.5	5.9	160,810	65.6	6.7
3. Balance of Goods and Services	-2,990	-2.3	-2,103	-1.2	-	-206	-0.1	-
3.1 Exports	24,916	19.2	33,571	19.2	6.6	47,694	19.4	7.3
3.2 Imports	27,906	21.5	35,674	20.4	5.4	47,900	19.5	6.1
Gross Domestic Product (GDP)	129,617	100.0	174,866	100.0	6.2	245,258	100.0	7.0
Expenditure on Consumption and Gross Capital Formation	132,607	102.3	176,969	101.2	6.0	245,464	100.1	6.8
Public Expenditure	24,235	18.7	30,667	17.5	5.4	42,556	17.4	6.8
Private Expenditure	108,372	83.6	146,302	83.7	6.4	202,908	82.7	6.8

^{1/} Including change in inventory and statistical discrepancy.

3.1 Investment Expenditure

Investment expenditure is projected to increase by 7.2 per cent annually which is a rate higher than the rate achieved during the Third Plan period. This target growth rate is essential for the acceleration of economic recovery during the first two years of Fourth Plan and for the achievement of the production targets during the five year period. The investment expenditure target entails an increase in private investment expenditure of 7 per cent per annum and public investment growth of 8.1 per cent per annum. To achieve this investment expenditure target, greater effort has to be made by the Government to improve the investment climate in Thailand in order to encourage a higher rate of increase in private investment. At the same time, public investment expenditure has to be expanded at an even faster rate in order to achieve the target growth rate of an overall increase in investment of 7.2 per cent per annum.

3.2 Consumption Expenditure

Total consumption expenditure is envisaged to increase by 6.6 per cent per annum. This is higher than the average of 6.1 per cent per annum that was achieved during the Third Plan period. Public consumption expenditure is estimated to increase by 6.3 per cent per annum and private consumption expenditure by 6.7 per cent per annum. It is expected that the growth rate of private consumption will be higher than during the Third Plan. This is because private consumption cannot be reduced by very much, despite the expected increase in taxation. Certain shifts in income during the Third Plan has resulted in a higher level of spending as economic groups with a higher propensity to consume acquire more income. Public consumption expenditure on the other hand, is expected to increase at a slower rate than during the Third Plan as a result of the envisaged increase in investment expenditure and the subsequent reduction in expenditure for general administration.

3.3 Foreign Sector Expenditure

During the Fourth Plan period, exports of goods and services is projected to grow at an average rate of 7.3 per cent per annum in real terms as compared with the average of 6.6 per cent per annum during the Third Plan. The target growth rate for merchandise exports is 7.5 per cent per annum. Services are projected to increase at 6.7 per cent per annum. The target growth rate for imports of goods and services has been set at 6.1 per cent per annum. During the Third Plan, this growth rate target was 5.4 per cent per annum. International trade will continue to play an important role in the Thai economy and the proportion of foreign trade in the Thai economy is expected to remain at the level attained towards the end of the Third Plan. A slight change in the composition of foreign trade is envisaged in that the proportion of exports will gradually increase while the proportion of imports will gradually decrease in accordance with the export and substitution plans which are presented in detail in Chapter four of Part Three.

Table 2.4 shows the target growth rate of expenditures in nominal terms which corresponds with the previously mentioned targets in real terms. The difference between the growth rate in nominal terms as shown in Table 2.4 and the growth rate in real terms as shown in Table 2.3 can be accounted for by the projected price deflator for each category of expenditures.

Table 2.4
Investment, Consumption, and Foreign Sector Expenditure Targets
(at market prices)

Categories	Third Plan Period					Fourth Plan Target		
	1971		1976		1972-76 Average Annual Increase	1981		1977-81 Percentage Annual Increase
	Value (million baht)	% of GDP	Value (million baht)	% of GDP		Value (million baht)	% of GDP	
1. Investment Expenditure	32,772	22.6	76,830	23.7	19.0	140,271	23.1	12.8
1.1 Public	10,453	7.2	18,741	5.8	13.9	36,373	6.0	14.6
1.2 Private	22,319	15.4	58,089	17.9	22.5	103,898	17.1	12.3
2. Consumption Expenditure	116,368	80.5	260,407	80.1	17.8	475,019	78.3	12.8
2.1 Public	16,969	11.7	36,626	11.3	16.8	62,720	10.3	11.4
1/ 2.2 Private	99,399	68.7	223,781	68.8	18.1	412,299	68.0	12.3
3. Balance of Goods and Services	-4,533	-3.1	-12,125	-3.7	-	-8,767	-1.5	-
3.1 Exports	25,175	17.4	66,635	20.5	22.9	126,400	20.8	13.7
3.2 Imports	29,708	20.5	78,760	24.2	22.6	135,167	22.3	11.4
Gross Domestic Product (GDP)	144,607	100.0	325,112	100.0	17.9	606,523	100.0	13.3
Expenditure on Consumption and Gross Capital Formation	149,140	103.2	337,237	103.7	18.1	615,290	101.4	12.8
Public Expenditure	27,422	19.0	55,367	17.0	15.3	99,093	16.3	12.4
Private Expenditure	121,718	84.2	281,870	86.7	18.8	516,197	85.1	12.9

1/ Including change in inventory and statistical discrepancy.

4. Savings and Investment

The projected expansion of the economy at an annual average of 7 per cent during the Fourth Plan period will require a total investment of 615.7 billion baht as compared with the 316.5 billion baht investment requirement during the Third Plan period. On the other hand, gross national savings is expected to amount to a five-year cumulative total of 561.5 billion baht. Consequently, the savings-investment gap will amount to 54.2 billion baht which is about the same magnitude as the projected trade deficit. This savings-investment gap had to be filled by an inflow of real resource from abroad, details of which are presented in Chapter four. Details relating to the savings-investment gap in both public and private sectors can be summarized as follows:-

4.1 Public Sector

The savings-investment gap for the public sector during the Fourth Plan period is expected to amount to about 72.3 billion baht as compared with 27.1 billion baht during the Third Plan period. The significantly larger size of the discrepancy between investment and savings in the public sector can be explained to a considerable extent by the increase of government expenditures on defence, administration, debts service and the provision of social welfare services. At the same time, the government's revenue is not expected to increase rapidly. Consequently, the government's investment programmes have to be financed by foreign loans and grants as well as the mobilization of domestic savings. Financing a resource gap of this magnitude domestic and foreign borrowing are not expected to seriously affect domestic economic and price stability. Details of envisaged domestic and foreign borrowing are presented in Chapter 3 of Part Two along with its effects on the economy.

4.2 Private Sector

Contrary to the Third Plan during which the discrepancy between investment and savings in the private sector amounted to 10.9 billion baht, private savings are projected to be larger than private investment by 18.1 billion baht during the Fourth Plan. This can be explained largely by the expected increase in private savings resulting from the decrease in the marginal propensity to consume as income rises. Meanwhile, private investment is not expected to increase as fast as during the Third Plan period. A significant amount of private savings is therefore expected to be available for investment mobilization by the Government during the Fourth Plan period. Nevertheless, foreign investment in the private sector is still considered essential, as the Government will be borrowing substantially from the private sector to finance its budget deficit.

Table 2.5
Savings-Investment Gap
 (at market prices)

(Billion Baht)

	Third Plan	Fourth Plan	Annual	Average G.R.
			1972-76	1977-81
1. Overall Economy				
Savings	278.456	561.484	20.8	14.2
Investment ^{1/}	316.510	615.723	21.4	12.1
Export of Goods and Services	259.874	504.754	22.9	13.7
Import of Goods and Services	297.928	558.993	22.6	11.4
Savings-Investment Gap	-38.054	-5.4239	-	-
2. Public Sector				
Saving	38.218	-83.713	37.9	31.6
Investment ^{1/}	65.323	156.019	13.9	14.6
savings-Investment Gap	-27.105	-72.306	-	-
3. Private Sector				
Savings	240.238	477.771	20.5	11.8
Investment ^{1/}	251.187	459.704	26.5	11.6
Savings Investment Gap	-10.949	18.067	-	-

^{1/} Including Changes in inventories.

5. Balance of Payments Prospects

The inflow of foreign capital during the Fourth Plan period is expected to amount to 54.2 billion baht which is equivalent to the size of the envisaged deficit in the trade and services accounts for the same period. This is also identical to the magnitude of the resource gap during the Plan period. Targets for the mobilization of capital to fill this gap are as follows.

5.1 Investment Income

During the Third Plan, the capital inflows and outflows of this account of the balance of payments pretty well balanced out. During the Fourth Plan, however, a net deficit in this investment income account is envisaged. This deficit is expected to reach 12,392 million baht by the end of the Fourth Plan period. This is due to the expected

slower rate of increase in foreign reserves which to a large degree determines additional income from investment. At the same time, it is envisaged that the payment of interest, profits and dividends on foreign investment in Thailand will increase at a more rapid rate. Hence, in order to reduce the outflow of investment income, the Government has to undertake measures to encourage re-investment of these profits by foreign investors. Otherwise, the deficit in this investment income account will continue to grow larger over time.

5.2 Transfer

In the past, the transfer account played an important role in strengthening of the country's balance of payment position. However, during the Fourth Plan period receipts in the transfer account are expected to decrease as a result of the expected reduction in foreign grants. Over the Plan period, net transfer is projected at 5,500 million baht which represents an average increase of 10.2 per cent per annum.

5.3 Capital Movements

In order to maintain the balance of payments within the target range inflows of foreign capital would have to amount to about 173,115 million baht. This is equivalent to an average increase of 8.9 per cent per annum. This entails an average annual increase in private capital of 81.7 per cent or 141,511 million baht and an average annual increase in public capital of 18.3 per cent or 31,604 million baht. The total net capital movement for the five year period is forecasted at 60,973 million baht or an annual increase of 9.3 per cent per annum. Of this amount, 61 per cent or 37,134 million baht will be net private capital movement and 39 per cent or 23,839 million baht will be net public capital movement.

In order to realize this foreign capital inflow target, the Government has to undertake many concrete measures on a continuing basis. In addition, investment policies and measures have to be reviewed to improve the overall investment climate. Various government implementing agencies and public enterprises responsible for foreign loan projects will be encouraged to prepare projects for loan application. The implementation of foreign loan projects in which final agreement has been reached will also be speeded up to meet the plan schedule. It is estimated that during the Fourth Plan, the actual disbursement of foreign loans will be higher than during the Third Plan which was only 55 per cent of the total Plan commitment.

In sum, to achieve the Fourth Plan macro target, the current account deficit of the balance of payments will have to amount to 54.2 billion baht. After including the net deficit in investment income of 12.4 billion baht, inflows of foreign capital are projected at 66.6 billion baht for the five-year period. Of this total, about 5.5 billion baht is expected to be registered in the transfer account, 60.9 billion baht in the capital movement account and 6 million baht in the errors and omissions category which will result in a balance of payment surplus by 5.8 billion baht over the Plan period.

Table 2.6
Fourth Plan Balance of Payments Targets

Million Baht

Items	1976	Total Third Plan 1972 - 1976	Average Annual Growth	1977	1978	1979	1980	1981	Total Fourth Plan 1977 - 1981	Average Annual Growth
Merchandise										
Exports F.O.B.	54,250	200,720.3	28.7	65,003	73,358	82,586	92,761	104,459	418,167	14.0
Imports C.I.F.	-71,350	-271,582.5	23.1	-82,698	-91,680	-100,424	-110,480	-122,634	-507,916	11.5
Trade Balance	-17,100	-70,862.2	13.6	-17,695	-18,322	-17,838	-17,719	-18,175	-89,749	1.3
Services										
Receipts	12,385	59,155.2	8.2	13,212	15,020	17,057	19,357	21,941	86,587	12.2
Payments	-7,410	-26,344.5	19.5	-8,184	-8,953	-10,068	-11,339	-12,533	-51,077	11.1
Net Services	4,975	32,810.7	0.04	5,028	6,067	6,989	8,018	9,408	35,510	13.8
Balance of Trade and Service	-12,125	-38,051.5	-	-12,667	-12,255	-10,849	-9,701	-8,767	-54,239	-
Returns from Investment										
Receipts	3,465	12,926.4	25.7	3,500	3,250	3,150	3,300	3,700	16,900	1.5
Payments	-4,000	-14,116.2	24.7	-4,520	-5,108	-5,772	-6,522	-7,370	-29,292	13.0
Net returns from Investment	-535	-1,189.8	-	-1,020	-1,858	-2,622	-3,222	-3,670	-12,392	-

Items	1976	Total Third Plan 1972 - 1976	Average Annual Growth	1977	1978	1979	1980	1981	Total Fourth Plan 1977 - 1981	Average Annual Growth
Transfers										
Private	300	8,839.7	119.2	400	500	600	700	800	3,000	21.9
Public	500	2,716.9	-8.0	500	500	500	500	500	2,500	-
Net Transfers	800	11,556.6	24.9	900	1,000	1,100	1,200	1,300	5,500	10.2
Balance on Goods, Services and Transfers	-11,860	-27,684.7	-	-12,787	-13,113	-12,371	-11,723	-11,137	-61,131	-
Capital Movements										
Private	5,300	23,565	83.2	5,896	6,569	7,299	8,187	9,183	37,134	11.6
Direct Investment	2,000	10,613.1	37.7	2,300	2,650	3,050	3,500	4,050	15,550	15.2
Drawings	3,700	15,500.6	38.9	4,250	4,950	5,800	6,750	7,900	29,650	16.4
Repayments	-1,700	-4,887.5	93.9	-1,950	-2,300	-2,750	-3,250	-3,850	-14,100	17.8
Loans and Credits	1,370	5,517.3	62.1	1,550	1,750	1,950	2,250	2,550	10,050	13.2
Drawings	6,520	26,934.5	22.7	7,100	7,750	8,500	9,350	10,250	42,950	9.5
Repayments	-5,150	-21,417.2	9.8	-5,550	-6,000	-6,550	-7,100	-7,700	-32,900	8.4
Others	1,930	7,434.6	64.4	2,046	2,169	2,299	2,437	2,583	11,534	6.0
Drawings	12,790	43,607.7	52.4	13,110	13,438	13,774	14,118	14,471	68,911	2.5
Repayments	-10,860	-36,173.1	47.3	-11,064	-11,269	-11,475	-11,681	-11,888	-57,377	1.8

Items	1976	Total Third Plan 1972-1976	Average Annual Growth	1977	1978	1979	1980	1981	Total Fourth Plan 1977-1981	Average Annual Growth
Public Sector ^{1/}	4,401	8,977.2	108.5	3,209	3,836	5,135	5,941	5,718	23,839	7.7
Loans	2,451	7,162.2	47.5	3,259	4,457	5,756	6,562	6,055	26,089	21.0
Disbursement	3,288	10,726.4	28.9	4,172	5,407	6,779	7,750	7,496	31,604	18.6
Repayments	-837	-3,564.2	7.9	-913	-950	1,023	1,188	-1,441	-5,515	11.6
Other Loans ^{2/}	2,000	2,000	-	-	-571	-571	571	-287	-2,000	-
Disbursement	2,000	2,000	-	-	-	-	-	-	-	-
Repayments	-	-	-	-	-571	-571	571	-287	-2,000	-
Other Capital Transfer in Public Sector (net)	-50	-185	-	-50	-50	-50	50	-50	-250	-
Total Capital Transfer	9,701	32,542.2	62.6	9,105	10,405	12,434	14,128	14,901	60,973	9.3
Net Error and Omission	1,285	3,957.4	15.9	1,200	1,200	1,200	1,200	1,200	6,000	-
SDR	-	320.7	-	-	-	-	-	-	-	-
Net Changes in Reserve	-874	9,135.6	-	-2,482	-1,508	1,263	3,605	4,964	5,842	-
Year End Reserve ^{3/}	1,325.1	-	13.1	1,201.0	1,125.6	1,188.8	1,369.1	1,617.3	-	4.7

^{1/} Including loans of Government and Public Enterprises.

^{2/} Including Non-Project Loans committed by Public Enterprises

^{3/} In million US dollar at the conversion rate of 1 US dollar per 20 baht.

CHAPTER III

PLANNED DEVELOPMENT EXPENDITURE AND ITS FINANCING

1. Introduction

In order to achieve the national development objectives and policies outlined in Chapter 2 of Part I, the formulation of fiscal and monetary policies, the plan size and public investment allocation priorities should adhere to the following guiding principles:

1.1 Mobilization of Resources and Improvement of Tax Structure

In addition to the objective of the distribution of income and prosperity to various regions and rural areas, it is necessary to promote economic recovery and ensure stability. To accomplish this additional revenue will have to be adequately mobilized. Revenue policy, therefore, must be set to improve tax administration and introduce new direct taxes in accordance with private investment expansion and a more equitable income distribution.

1.2 Allocation Priorities of Development Expenditures

It is desirable to establish guidelines for the allocation of Government development expenditures. Some of these guidelines are:—

1.2.1 Special importance will be given to development projects and programmes which help support the reform of the fundamental socio-economic structure and the reduction of the economic and social disparities. Thus, priorities will be given to the projects and programmes which promote decentralization of social services to reach more people, in particular, projects and programmes to improve productivity, living standards of farmers and welfare for low income groups in urban and rural areas.

1.2.2 The absorptive capacity and the readiness of projects and programmes will be taken into consideration for the development expenditure allocation during the Plan period. This is to avoid a delay in the disbursements of government budget and foreign loans due to the overprogramming and excessive scale of the projects as experienced in the past. Also, the planning and evaluation schemes for development projects should be further improved so that the Plan implementation and related disbursements will be on time target.

About one-third of the planned development expenditures will be allocated to new programmes originated in the Fourth Plan. These programmes cover a number of areas, including land reform, the improvement of agricultural productivity, educational reform, the decentralization of economic infrastructure to rural areas, the expansion of social services to remote rural areas, the provision of social welfare for low income groups in urban areas, additional subsidies for local governments and local authorities for generating their own development projects in accordance with the decentralization policy, and the reconstruction and conservation of natural resources. The rest of the development budget will be channelled into on-going projects which began during the Third Plan period.

1.3 Greater Role of Monetary Policy

In the past, monetary policy has been used mainly to complement fiscal management in traditional ways such as for public finance, for economic stabilization and for balance of payments purposes. During the Fourth Plan period, monetary policy will have to play a more active and important role for promoting development in addition to its conventional role. In particular monetary measures will be applied to promote a more equitable distribution of income to accelerate faster rural development and to expand agricultural credit.

2. Public Development Expenditure

To comply with guidelines mentioned above, public development expenditure during the Fourth Plan should be in the region of 252,450 million baht, or an increase of 14 per cent per annum. The breakdown of this sum will be as follows:- 200,400 million baht from central budget appropriations, 19,750 million baht from current surplus of local governments and state enterprises, 29,800 million baht from foreign loans and 2,500 million baht from foreign grants. This figures are subject to certain changes, as public development expenditure will have to be revised in accordance with changes in economic situations during the Plan period.

Total public development expenditure during the Fourth Plan period, amounting to 252,450 million baht or about 11.1 per cent of GDP is double the actual amount of public expenditure for development during the Third Plan period. The following constraints have been taken into consideration:

2.1 Fiscal Capability

The overall Plan size is based upon assumptions relating to the Government's ability to increase its revenue, the extent to which external loans and grants can be mobilized and investment requirements of both the public and the private sectors.

2.2 Absorptive Capacity of the Public Sector

This includes considerations relating to delays in the disbursement of the envisaged government budget, foreign loans and grants as well as delays in project preparation and implementation.

3. Mobilization of Financial Resources

Taking the above constraints into account, it is envisaged that of the overall public development expenditure target of 252,450 million baht, 220,150 million baht will be mobilized from domestic sources, and the remaining 32,300 million baht will be mobilized from external sources, or 87.2 per cent and 12.8 per cent of the total respectively.

3.1 Domestic Financing

Sources of domestic financing can be classified as follows:

3.1.1 Government Revenue. Assuming no change in the existing tax structure and an economic growth rate of 7 per cent per annum, it is estimated that total government revenue will amount to about 332,760 million baht during the Fourth Plan or equivalent to an annual average increase of 14.4 per cent.

3.1.2 Domestic Financing: Revenue Policy. Additional revenue can be obtained from tax adjustments, domestic borrowing and the revenues of various state enterprises and local authorities. Additional revenue can be obtained by implementing policies relating to the overall objectives of the Fourth Plan as stated in Chapter 3, Part I. Such policies can be summarised as follows:

(1) Guidelines for Improvement of Tax and Non-Tax Revenues. The improvement of tax structure to raise revenues must be consistent with the income distribution objective. Thus new direct taxes, such as property tax, inheritance tax and income tax on interest income from bank deposits will be imposed. In addition, efficiency in tax collection must be improved. It will be necessary to increase the number of tax collectors, get rid of corrupt officials, improve information systems, tax assessment and methods of tax collection as well as to set up a unit within agencies responsible for tax collection to inspect operations.

(2) Guidelines for Domestic Borrowing. It is estimated that domestic borrowing for the Fourth Plan will be 78,270 million baht and treasury balance 15,270 million baht. Domestic borrowing should comply with the following guidelines:

(a) Extent of Borrowing: The amount of loans from domestic resources must be restricted so that the expansion rate of the money supply will not exceed 13 per cent per annum.

(b) Borrowing from the Central Bank: Loans from the Bank of Thailand, if necessary, should be at a minimum level, if reasonable price stability is to be maintained. On the other hand, vigorous efforts should be made to sell bonds to commercial banks, the Government Savings Bank, financial institutions and in the securities market.

(c) Debt Management: The Government should try to reduce interest payments by selling more Treasury bills instead of bonds which have higher rate of interest. The accumulation of Treasury balances by unnecessary borrowing should be avoided.

(d) Disbursement Delay: It is estimated that there will be a delay in the disbursement of the government budget by about 3 per cent which is equivalent to about 15,270 million baht. This sum has not yet been earmarked for any specific propose.

(3) Revenues from State Enterprises. With regard to the financial resources of state enterprises, the following guidelines have been formulated.

(a) Pricing policy should be improved in accordance with changes in the economic situation.

(b) Support should be given to those state enterprises seeking foreign loans for large, socially beneficial projects.

(c) Government compensation and subsidies for public utilities should be revised. Government subsidies for state enterprises should be used for expanding registered capital or else certain conditions should be laid down governing the use of such funds for the purpose of improving operational efficiencies so that state enterprises will eventually be self-financing.

(d) The management of those state enterprises currently experiencing financial losses must be promptly improved according to the guidelines stated in Chapter 5 of Part II and Chapter 3 of Part IV.

(e) The investment budget for existing programmes or the expansion of programmes during the Fourth Plan will be considered according to the following guidelines:

(e.1) Operations in future should be decentralised from the Bangkok area to the greatest extent possible.

(e.2) Investment projects should help promote more employment.

(e.3) Investment programmes must be consistent with the development policies and objectives of the Plan.

(4) Guidelines Relating to Revenues of Local Governments.

Local Governments should be given a more important role to play in the development of their communities. Improvement of local tax administration and expansion of local fiscal base must be encouraged so that increased local revenues can be achieved.

3.1.3 Budget Appropriation. With respect to the above set of fiscal policy guidelines, it is estimated that the central budget appropriations during the Fourth Plan will amount to 434,600 million baht or an average increase of 11.1 per cent per annum. This amount contains 225,530 million baht for non-development expenditure, 6,000 million baht for free medical services for low-income groups and 200,400 million baht for development expenditure. As such, the budget for development is equivalent to 46.1 per cent of total budget appropriations.

Table 3.1
Budget Appropriation during the Fourth Plan Period

(Million baht)

Budget Allocation	1977-1981
(1) General Administration	106,520
(2) Defense	72,820
(3) Debt Service	46,190
Sub - Total Non - Development	(225,530)
(4) Transfers to Local Authorities	6,000
(5) Free Medical Services	2,670
(6) Development Budget	200,400
Total	434,600
Financed by :	
(1) Tax and Non - tax Revenue	341,600
Existing Tax Structure	(332,760)
Tax Improvement	(8,300)
(2) Domestic Borrowing	78,270
(3) Shortfall	15,270
Total	434,600

The development budget of 200,400 million baht has been earmarked under the condition that non-development expenditure can be attained. This means that should non-development expenditure be increased over that stipulated in this Plan, additional revenue from tax adjustment and other sources has to be obtained in order to retain the development budget at 200,400 million baht. To increase the importance of the development budget, the disbursement capacity of this budget must be improved. Actual disbursements for development as a percentage of the total development budget in fiscal year 1976 was only 79 per cent. Efficiency in disbursement for development purposes should be increased to 84 per cent by fiscal year 1981.

3.2 Mobilization of Funds from External Sources:

3.2.1 Foreign Loans; The total amount of foreign loans envisaged for the Fourth Plan is 29,800 million baht. The major source of financing are the international financial institutions, in particular IBRD and ADB. These two institutions are expected to supply loans amounting to 16,480 million baht or 55 per cent of the total amount of foreign loans. The remainder will be sought from foreign governments, foreign financial institutions and international capital markets.

Table 3.2
Foreign Loans during the Fourth Plan Period
(Million Baht)

Sources	1977 - 1981
International Financial Institutions	16,480
Other Sources	13,320
Total	29,800

3.2.2 Foreign Debt Management Policy. In the Fourth Plan, there will be a significant increase in the amount of foreign loans, compared to previous Plans. As a consequence, it becomes imperative that debt management and foreign loan creation procedures must be improved so that foreign loans can be fully and efficiently utilized for development purposes. To this end, foreign loan regulations have to be revised. The Foreign Loans Sub-committee has been responsible for considering all aspects of foreign loan creation procedures and debt management. Special consideration will be given to the overall loan programme and debt service burden, as well as the individual loan project, including sources of finance, terms and conditions. The revision of the regulations concerning foreign loans is essential for achieving greater efficiency in foreign debt management which, in turn, will support the development schemes as well as the monetary and fiscal policies of the Plan. Policies for foreign debt management during the Fourth Plan period include the following.

(1) Project Readiness. Delays in the commencement of projects involving foreign financing and a low rate of loan disbursement during the past period can be attributed mainly to the slow implementation of project feasibility studies and the incompleteness of project preparation. This resulted in postponement of project submissions to potential lenders and subsequently delayed implementation of various projects. In the Fourth Plan, it is vital that pre-investment studies and project preparation be accelerated so as to avoid unnecessary delay in project implementation.

(2) Interest Rate. It is desirable that the Government should seek a soft-term loan from bilateral sources for development projects. Borrowing from the international financial institutions with higher rates of interest, however, will be considered as a second alternative.

(3) Local Currency. Funds for the local cost component of these projects must be sufficiently appropriated to support the foreign loan projects.

(4) Sources of Finance. Sources of financing must be suitable to the nature of each particular project. This can be done by deciding what type of project should be eligible for what types of foreign financing. Similarly, guidelines can be laid down for various sectors.

3.2.3 Foreign Grants. During the Plan period, it is estimated that the amount of foreign grant will reach 2,500 million baht. Sources of technical assistance and grants are the United Nations, the Colombo Plan, the United States, other countries, various foundations and volunteer corps. It is expected that grants from the United States, the largest donor in the past, will be reduced substantially. The United Nations and the Colombo Plan, on the other hand, will become more important sources of technical assistance. A greater effort is required for obtaining technical assistance from various other countries.

3.2.4 Policies for Technical and Grant Assistance

(1) Support for Loan Projects. Technical assistance is required for supporting foreign loan projects, in particular at the pre-investment stage. This is the usual requirement of potential foreign lending institutions.

(2) Plan and Project Type of Technical Assistance. Technical assistance should be sought in the form of project assistance to serve the technological needs for the development programmes in various fields.

(3) Economic and Social Feasibility. Grants should help promote the utilization of domestic resources and labour. More importantly, technology and technical know-how must be transferred to Thai officials so that they will be able to carry on the projects after the departure of the foreign specialist.

(4) Follow up and Evaluation. Grant projects, especially study projects, should be followed up and evaluated in order to make use of the results of the study.

4. Public Development Expenditure Budget and Sources of Financing

Based on the monetary and fiscal policies mentioned above, total public development expenditure during the Fourth Plan period (1977-1981) should amount to about 252,450 million baht. Details relating to this budget are presented below.—

Table 3.4
Sources of Financing for Fourth Plan Expenditures
(Million Baht)

Source	Third Plan				Fourth Plan	
	Planned	%	Actual	%	Amount	%
1. Development Expenditures	100,275	100.0	92,548	100.0	252,450	100.0
2. Sources:						
2.1 Domestic Sources:						
Revenue Surplus	27,265	27.2	26,209	28.3	106,860	42.3
- Existing Tax Structure	-	-	-	-	98,560	39.0
- Tax : Improvement	-	-	-	-	8,300	3.3
Borrowings	34,235	34.2	34,551	37.3	78,270	31.1
- Government Savings Bank	4,100	4.1	8,960	9.7	12,200	4.9
- Commercial Banks and Financial Institutions	30,135	30.1	16,531	17.8	28,030	11.1
- Bank of Thailand			9,060	9.8	38,040	15.1
Shortfall	8,000	8.0	-	-	15,270	6.0
Self - financing of State Enterprises and Local Government	13,845	13.8	17,437	18.9	19,750	7.8
Sub - Total	83,345	83.2	78,197	84.5	220,150	87.2
2.2 Foreign : Sources						
Loans	11,930	11.9	11,684	12.6	29,800	11.8
Grants	5,000	4.9	2,667	2.9	2,500	1.0
Sub - Total	16,930	16.8	14,351	15.5	32,300	12.8

4.1 Justification of Expanded Development Expenditures

Development projects requiring funds from public development budget and/or foreign financing proposed for the Fourth Plan have increased in number. As such, the size of the development budget and the rationale behind the investment programmes of the Fourth Plan should be explained. This is done below:-

4.1.1 During the first two years of the Fourth Plan, it will be necessary to accelerate investment and the process of restructuring the economy so that production expansion and a higher level of employment can be attained. Public investment expenditure is the main instrument for determining the appropriate level of aggregate investment which will stimulate economic growth.

4.1.2 During the Fourth Plan, emphasis will be put on the development of rural areas so that the benefits of development are distributed more equitably. Consequently, it will be necessary to increase public investment expenditure to finance a number of rural development projects. These projects include land reform, the provision of rural infrastructural facilities such as rural roads, provincial electricity and the development of water resources as well as the organization of an effective marketing system for agricultural products.

4.1.3 Social development is also an important component of the Fourth Plan, especially education, public health, and the development of social delivery systems for various regions and remote rural areas. In this connection, more government subsidies will have to be provided to provincial and local authorities than in the past.

4.1.4 A number of investment projects proposed by various state enterprises which aim at expanding services to rural areas or those which are considered vital for accelerating growth will be supported by the development budget and will be allowed to obtain foreign financing. The investment proposals which fall in this category include the accelerated rubber replantation project, the Pattani Hydro-electric dam and the mass transit system for the Bangkok Metropolitan area. In considering these projects, particular attention has been paid to analysing the benefits to be derived, the implementation capacity of relevant operating agencies as well as the debt repayment burden that will be created.

4.2 Development Allocation Objectives and Targets

4.2.1 Development Allocation Objectives

In order to overcome the short-term and long-term economic problems and to expand social services in such a way so that these services reach more people, development expenditure will be allocated according to the following guidelines:-

(1) High priority will be given to the investment programmes which help stimulate production and exports of both agricultural and industrial products and programmes aimed at raising the income of farmers through improvement of the marketing system for agricultural products.

(2) Emphasis will be given to rural infrastructure, projects which will accelerate rural development and a more equitable distribution of income.

(3) More importance will be given to projects and programmes designed to expand in particular, public health services such as medical care for rural people and educational development to meet the requirements of a growing economy and an increasing population.

(4) Priority will be given to projects and programmes aimed at the rehabilitation and conservation of natural resources and the environment, particularly those relating to land forest and water resources.

(5) In order to improve administrative efficiency it is necessary to increase incentives for civil servants. In particular, the salary scales as authorized by the Civil Service Act B.E. 2518 must be adjusted to meet the rising cost of living. Shifts in salary scales from Account A to Account B and from Account B to Account C will take place in 1978 and 1980 respectively. This means increasing public expenditure by 5,040 million baht during the Fourth Plan. This figure excludes salary adjustments for the military services. The budget for this series of salary increases has already been earmarked. Of this total, 55 per cent will be taken from the administration budget and 45 per cent will be allocated from the development budget especially from the education and public health sectors.

4.2.2 Development Allocation Targets

Public development expenditure during the Fourth Plan can be classified by sectors as follows:-

(1) Agriculture and Irrigation. The development budget for this sector during the Fourth Plan will be 39,100 million or 15.5 per cent of the total budget, compared with 13.7 per cent during the Third Plan period. The investment projects aim at improving the structure of agricultural production so as to achieve the production target of a rate of expansion in output of 5 per cent per annum. Major projects include seed multiplication, livestock development, fishery development, forestation, accelerated agricultural extension service, the improvement and expansion of irrigation systems, agricultural credit expansion and programmes for land reform.

(2) Industry Mining and Commerce. A development budget of 3,605 million baht will be earmarked for this sector during the Fourth Plan. For industry, the Government will encourage private investment in industrial activities by providing basic supporting services. Measures will also be taken to promote a wider geographical dispersion of industries in Thailand. Such measures include the establishment of industrial estates in different regions of the country. At the same time, measures will be taken to check industrial pollution. For mining, priority will be given to the survey and development of new mineral deposits. With respect to commercial activities, the Government will support efforts to develop both domestic and foreign markets and will take measures to organise a more efficient marketing system for both domestic and foreign trade. Efforts will also be made to promote the expansion of tourism.

(3) Transport and Communication. A total amount of 37,175 million baht will be earmarked for this sector, or 14.7 per cent of the total development budget of the Fourth Plan, compared with 19.4 per cent during the Third Plan period. The transportation network will be expanded. Feeder roads and rural roads linking agricultural production areas to markets will be given high priority. The development of water transportation and regional commercial airports will also be given special attention.

(4) Power. The development budget for the power sector will amount to 15,950 million baht or 6.3 per cent of the total development budget of the Fourth Plan, compared with 7.9 per cent in Third Plan. In order to meet the rapid increase in demand for electricity, large projects such as the hydro-electric power plant at Lower Quae Yai Dam and the thermal power plant with a capacity of 300 MW will be constructed. The electricity distribution system in rural areas will also be expanded to cover a wider area. In addition, attempts will be made to explore the possibilities of using other sources of energy instead of fuel power which is becoming more expensive over time.

(5) Social Development. The development budget for social development (excluding health and education) will be 8,620 million baht or 3.4 per cent of the total development expenditure of the Fourth Plan, in comparison with 2.7 per cent in the Third Plan. Priorities will be given to rural development, the establishment of self-help settlements the provision of land deeds, the expansion of community development areas and the introduction of a social insurance system. Programmes to promote religion and culture will also draw on this budget.

(6) Public Utilities. A development budget of 33,335 million baht is earmarked for the development of public utilities during the Fourth Plan. This is equivalent to 13.2 per cent of the total development budget for 1977-81. With this amount, the Government will speed up work on the project to supply potable water to a larger number of rural communities, as well as other key projects such as the expansion of the metropolitan waterworks, additional housing for low-income families, town planning and the development of a mass transit system for the Bangkok metropolitan area. Additional subsidies will also be given to local authorities to build roads, sewerage and drainage system as well as other public utilities.

(7) Public Healths. A development budget of 19,380 million baht is to be allocated to the public health sector during the Fourth Plan. This is equivalent to 7.7 per cent of total development expenditure of the Fourth Plan. During the Third Plan, 6.3 per cent of the total development budget was earmarked for public health. Most of this budget will be used to extend health services to rural areas and remote communities. Special effort will be made to improve and expand services relating to disease prevention and medical care. District hospitals will be built and various medical centres and units will be expanded.

(8) Education. Education will get 95,285 million baht or 37.8 per cent of the total development budget of the Fourth Plan, compared with 32.8 per cent in the Third Plan. Differences in the amount and quality of education among different areas will be reduced. Compulsory and secondary education will be expanded to every **tambol** (Sub-district)

Table 3.5
The Fourth Plan Public Development Expenditures:
Classified by Sectors and by Sources

(Million Baht)

Sector/Sources	Government Budget	Foreign Loan	Foreign Grants	Self- Financed of State Enterprises and Local Govt.	Total	%
Agriculture and Irrigation	33,495	4,880	575	150	39,100	15.5
Industry, Mining and Commerce	2,085	710	225	585	3,605	1.4
Transport and Communications	26,735	6,300	200	3,940	37,175	14.7
Power	1,485	10,800	50	3,615	15,950	6.3
Sub-total	63,800	22,690	1,050	8,290	95,830	38.0
Social Development	7,910	360	350	—	8,620	3.4
Public Utilities	15,025	6,750	100	11,460	33,335	13.2
Public Health	18,880	—	500	—	19,380	7.7
Education	94,785	—	500	—	95,285	37.7
Sub-total	136,600	7,110	1,450	11,460	156,620	62.0
Grand Total	200,400	29,800	2,500	19,750*	252,450	100.0

* Including self-financed of local governments amounting to 11,200 million baht.

The education budget will also be used to develop vocational and non-formal education to meet the needs of an expanding economy in general and the demand in the jobs market in particular.

5. Monetary Policy and the Development to Financial Institutions

5.1 Money Supply, the Domestic Price Level and the Development of Financial Institutions

During the Third Plan, financial institutions expanded at a remarkable rate, finance companies and securities companies mushroomed and their total assets are now second only to the commercial banks. With respect to monetary stability, the worldwide inflation in 1973 and 1974 had considerable effect on the Thai economy. The domestic price level in 1973 and 1974 increased by 15.6 and 24.3 per cent respectively and money supply increased by 20.6 per cent in 1973. For the other years of the Third Plan, however, there was more stability. The average rate of increase in money supply in 1972, 1975 and 1976 was 10 per cent per annum. For these same years, the average GDP growth was 5.7 per cent per annum and the domestic price level increased at an average rate of 5 per cent per annum.

Table 3.6
Assets of Financial Institutions
(Million Baht)

	Assets.		Percentage Change
	1971	1975	
Commercial Banks	48,823.4	118,986.3	146.4
Finance Companies	2,393.4	23,005.0	861.2
Government Savings Bank	7,693.1	14,151.8	84.0
Bank for Agriculture and Agricultural Co-operatives	1,608.1	5,186.0	222.5
Agricultural Co-operatives	1,213.5	2,253.7 ^{1/}	85.7
Insurance Companies	1,114.7	2,220.8	99.2
Savings Co-operatives	699.5	1,402.6	100.5
Industrial Finance Corporation of Thailand	582.0	1,478.2	154.0
Government Housing Bank	327.0	818.0	150.2
Small-scale Industries Finance Office	161.9	207.2	28.0

^{1/} Estimate

5.2 Money Supply Target

To achieve a rate of economic growth of 7 per cent per annum and at the same time limit the rate of inflation to 6 per cent per annum or less during the Fourth Plan, the expansion in money supply must not exceed 13 per cent per annum during this period.

To achieve the above targets and overcome the envisaged 93,525 million baht deficit in the treasury balance in the Fourth Plan, the Government will have to obtain more loans from domestic sources. In this regard, monetary measures will be directed towards the mobilization of private capital formation by encouraging financial institutions other than the commercial banks and the Government Savings Bank to invest in government securities to a greater extent.

5.3 Growth of Financial Institution: Some Guidelines

The Government will encourage the growth of financial institutions vis-a-vis the unorganized financial market and will apply measures to Channel funds mobilized into the areas which yield highest social benefits. In addition, a higher proportion of private investment should be financed by selling bonds or shares to the general public. At present, private investment is largely determined by family funds or the ability of the investor to borrow funds from banks.

The monetary measures that will be used must be consistent with the overall objective of maintaining monetary stability with economic growth. The following measures will be considered for implementation during the Fourth Plan period.—

5.3.1 Promotion of Security and Growth of Financial Institutions

(1) The measures relating specifically to the security of financial institutions which will be taken include the following:—

(a) the laws and regulations relating to financial institutions will be revised to protect depositors to the maximum extent possible and these financial institutions will be supervised more effectively through stricter enforcement of the relevant laws and regulations.

(b) the level of professional ability of the executive staff of these financial institutions will be raised by clarifying the standard practices in financial management and by encouraging more personnel training.

(c) the internal operations of these financial institutions will be supervised even more closely, particularly through the auditing of accounts and physical inspection of these institutions.

(d) the finance and securities companies which have achieved an exceptionally rapid increase in deposits will be supervised by the Bank of Thailand even more thoroughly with the view to ensure security and to build up public trust in these relatively new institutions in particular, the liquidity ratio, the risks to assets ratio and the large loans will be scrutinised carefully.

(2) Measures to promote the growth of financial institutions which will be taken include the following:—

(a) Financial institutions will be encouraged to mobilize more public savings, especially longer-term deposits exceeding 12 months. This would enable financial institutions to provide credit on a longer-term basis which would be more conducive to economic and social development.

(b) Financial institutions will be encouraged to open branches in various provinces in accordance with the regional development plans.

(c) Existing financial institutions will be streamlined and the setting up of new financial institutions will be encouraged, particularly those which provide credit to the local community and those which channel funds into areas of high priority for economic development.

(d) The Government will also support the expansion of other financial institutions (other than commercial banks, finance companies and securities companies), such as the Government Savings-Bank, the Bank for Agriculture and Agricultural Cooperatives, the Industrial Finance Corporation of Thailand and life insurance companies.

5.3.2 The Channelling of Credit

During the second half of the Third Plan the Bank of Thailand became more active in channelling commercial bank loans into areas of high priority for economic and social development. Some of the more important measures taken include :-

(1) A regulation was passed to compel commercial banks 1975 to channel at least 5 per cent of their total deposits into the agricultural sector. This minimum requirement was raised to 7 per cent in 1976. As a result, loans to the agricultural sector amounted to approximately 3,500 and 6,139 million baht in 1975 and 1976 respectively.

(2) Newly established provincial branches of the commercial banks are now required to provide loans to local enterprises equivalent to at least 60 per cent of their total deposits and one-third of this lending will have to be channelled to farmers.

(3) Commercial banks are now required to purchased bonds issued by the National Housing Authority (NHA). In 1976, these commercial banks must hold at least 1,000 million baht worth of NHA bonds.

In the Fourth Plan, considerable importance will be attached to policies relating to the channelling of funds into areas of high priority as identified in the Plan. Measures to influence the direction of funds will be applied even more vigorously with the extension in the amount of credit that must be earmarked for investment in key sectors and enterprises. Other financial institutions will also be encouraged to channel more funds into priority areas.

In this connection, measures will be taken to ensure that new branches of commercial banks and other financial institutions participate more actively in the development of local communities. In addition, commercial banks and related financial institutions will be encouraged to provide more funds on special terms to the specialized development banks such as the Bank for Agriculture and Agricultural Cooperatives. In this way, various funds are pooled for development purposes.

In addition, the Government will stipulate the proportion of institutional lending that must be channelled into key economic sectors. As a first step, commercial banks will be required to release credit to priority areas at an increasing rate each year so that by 1981, the last year of the Fourth Plan, 15 per cent of the total deposits of commercial banks is earmarked for projects in crucial sectors as identified in the Plan. Other financial institutions will be asked to allocate a specified proportion of their funds for agricultural development at a later stage.

5.3.3 Promotion of Management Efficiency and Public Companies

(1) In addition to supervising financial institutions to ensure that they operate according to the laws and regulations laid down, the Government will take measures to strengthen financial institutions in various aspects, including management, manpower development, techniques and project development. Government contribution in these areas should help institutions of various sizes to operate more efficiently.

(2) To diversify the structure of ownership, to bring about a greater degree of income distribution and to support the development of the securities exchange, the Government will encourage financial institutions to become public companies.

(3) The policy to encourage the development of the securities exchange is closely interrelated with the policies to encourage the establishment of public companies, a more equitable distribution of income and ownership pattern and the mobilization of public savings. More specifically, the Securities Exchange Act will be revised to provide better opportunities for investment in different fields. Such a revision should provide broadly similar incentives for investors in various sectors.

5.3.4 Promotion of Competition among various Financial Institutions

In general, the level of efficiency achieved by financial institutions and the extent to which these financial institutions are able to contribute to the expansion of the national economy will, to a considerable degree, depend on the amount of competition that exists among various financial institutions. As such, the Government will promote as much fair competition as possible among financial institutions operating in the same field as well as those in different fields. The measures which will be taken to encourage competition include the following :—

(1) Measures will be taken to prevent collusive agreements among financial institutions and other monopolistic practices.

(2) Financial institutions specializing in different fields will be given more opportunity to compete for public savings.

(3) With respect to loans, the Government will encourage financial institutions to move towards, project preparation, analysis and development and thus provide loans on the economic, technical and managerial soundness of projects to a greater extent. This new approach will enable financial institutions to provide a better service to the public as well as to contribute even more to economic development.

(4) The Government will encourage and assist the smaller financial organizations in improving and expanding their business in order to promote fairer competition in the financial field.

5.3.5 Operational Guidelines

The Government will formulate clear-cut guidelines relating to the role and coordination of the financial institutions to ensure that the financial resources mobilised by these institutions will be fully utilized in terms of economic and social development. These guidelines will be annually revised according to changes in financial conditions.

5.3.6 Revision of Financial Measures and Mechanism

To implement the policies outlined in previous sections, it is necessary to review all the measures that the Government may use to influence the operations of financial institutions including a revision of the laws and regulations relating to these institutions. In addition, certain changes at the Bank of Thailand will be made so that it can look after monetary stability and at the same time play a more progressive role in promoting economic and social development in Thailand.

CHAPTER IV

INCOME DISTRIBUTION AND REGIONAL DEVELOPMENT STRATEGIES

The Fourth National Economic and Social Development Plan incorporates a new set of income distribution and regional development strategies. These strategies are based on regional economic studies and past income distribution analyses which concluded that during the Third Plan, economic disparities between different regions and various groups of people have increased. The Government thus had to design measures and make adjustments in economic policies to try and check this undesirable trend and to deal urgently with the problems associated with a widening income gap in a systematic way. Development efforts in future must aim at a more equitable distribution of the benefits of growth. The standard of living of the poorest groups in different sectors of the economy must be raised. This is necessary in order to provide social justice which in the long run will contribute significantly to the political and economic stability of the nation.

1. Problems associated with Production Structures and Interregional Economic Disparities

Studies of various regional economies during the previous Plan support the notion that income inequality between different regions has increased.

1.1 Interregional Income Disparities

The economy of the Central region expanded at a more rapid rate than the economies of other regions as evidenced by its increasing share in national production from 57.2 per cent in 1971 to 59.8 per cent in 1976. During the Third Plan, the economy of the Central Region managed to grow at an average rate of 7.1 per cent per year which is higher than the national average of 6.2 per cent per annum during the same period. This means that the other regions grew at a rate lower than the national average. More specifically, the average annual growth rates in the Northeast, the Northern, and the Southern Regions amounted to 5.4 per cent, 4.5 per cent, and 4.8 per cent respectively during the same period.

During the previous Plan, the degree of economic concentration in the Bangkok metropolitan area intensified. By the end of the Third Plan, the Bangkok area accounted for about 50 per cent of the GDP of the Central region and about 30 per cent of National production. The phenomenal growth of Bangkok in effect pushed up the growth rate of the Central region as a whole and must be considered a main factor responsible for the increasing income disparities in Thailand.

On the other hand, the share of total GDP of the peripheral regions in Thailand decreased during the Third Plan. During 1971-1976, the share of total GDP by different regions changed significantly. This can be summarised as follows.

Northeast	— decreased from 15.4 per cent to 14.8 per cent
North	— decreased from 14.4 per cent to 13.2 per cent
South	— decreased from 13.0 per cent to 12.2 per cent
Central	— increased from 57.2 per cent to 59.8 per cent

Table 4.1

**Trends in Income Distribution and Regional Shares of National
Production 1971-1976**

(Constant 1962 prices)

Regional Gross Domestic Product (million baht)	North	Northeast	Central	South	Whole Kingdom
1971	18,653	19,935	74,117	16,912	129,617
1976	23,097	25,851	104,523	21,395	174,866
Average Annual Growth Rate	4.5	5.4	7.1	4.8	6.2
Regional Share of Gross Domestic Product (per cent)					
1971	14.4	15.4	57.2	13.0	100.0
1976	13.2*	14.8*	59.8	12.2*	100.0

* Regions with decreasing shares in national gross domestic product.

1.2 Problems concerning the Diversification and Acceleration of Regional Production

The increasing interregional economic disparities stem from two important economic structural problems. First, the production structure of the Central Region is more diversified than that of other regions, especially in terms of diversification into the industrial sector. Other regions are characterised by a very narrow agricultural base in which a few crops account for a large proportion of regional production and income. This is particularly so in the South and in the Northeast where there has been very little diversification of production into other sectors. Secondly, most of the increase in the levels of agricultural and industrial production in the past were achieved in the Central Region. In other regions, production expanded slowly and most of the increase in agricultural output was achieved through an expansion of cultivated area rather than increases in productivity.

1.3 The Sectors responsible for Income Distribution Problems

The interregional economic disparities can be explained to a considerable extent in terms of the dependence of areas outside the Central Region on the agricultural sector as the basic production sector and the main source of employment for the people living in those regions. Agricultural production in these peripheral regions expanded slowly. In fact, the agricultural sector in areas outside the Central region during the Third Plan period was basically stagnant. During 1971–1976 agricultural production in the North, the Northeast and the South increased at an average annual rate of 3.1 per cent, 4.0 per cent, and 3.1 per cent respectively in comparison with the rate of 5.5 per cent per year in the Central Region.

The performance of the non-agricultural sectors, particularly the industrial and commercial sectors, was more impressive. However, as these activities were concentrated mainly in the Central region, they, to a large extent, contributed to the undesirable trend in income distribution in Thailand. About 80 per cent of the GDP generated by the industrial sector can be accounted for by the Central Region and most of this by the Bangkok metropolitan area. In addition, about 60 per cent of the GDP originating from commercial activities is accounted for by the Central region.

It can be concluded that the varying degrees of weakness in the economic structure of different peripheral regions to a large extent explain the undesirable trend in income distribution in Thailand. This undesirable trend will continue unless some effort is made to develop the peripheral areas by improving the economic structure of these lagging regions. The Fourth Plan thus sets up a definite regional development strategy to alleviate this problem. This strategy is presented in Section Three of this Chapter.

2. The Problem of Income Disparities among Different Groups of People

Studies on income distribution reveal that there are considerable income disparities between different groups of people. The objective of improving income distribution between various groups of people is to be given the same priority as the objective of reducing interregional economic disparities.

Intergroup income distribution problems can be classified in terms of disparities between different occupations of the various sectors (agriculture, industry, commerce and services) and in terms of income disparities among different household groups by income categories (e.g. households with annual income of less than 6,000 baht, households with annual income of more than 30,000 baht etc.)

2.1 Income Disparities among different Occupational Groups

The latest Census of Population revealed that the agricultural sector employs the largest number of workers, about 70 per cent of the national labour force. This is followed by the commercial sector (wholesale and retail trades, banking and insurance, and related business activities), the services sector and then the industrial sector in that order. The 1976 comparison of labour productivity by main occupations revealed that the worker in the agricultural sector was the least productive, with a value-added per worker statistic of 7,113 baht per year. This is about one-tenth of the level of productivity achieved by workers in the commercial sector. However, within the same occupation group, as broadly defined, there were considerable income disparities.

Table 4.2
Income per Worker by Main Occupations in 1976

(1976 prices)

Occupations (by sectors)	Annual Income of Worker (in baht)
Agriculture	7,113
Industry	44,215
Commerce	70,339
Services	32,665

2.2 The Income Disparities among Households by Income Groups

Households are classified into three income groups as follows :—

- A. Households with an annual income of less than 6,000 baht.
- B. Households with an annual income between 6,000 and 29,999 baht.
- C. Households with an annual income exceeding 30,000 baht.

In 1973, the Northeast led all other regions in terms of a high proportion of poor households. About 41.1 per cent of the total number of households in the Northeast region had an annual income of less than 6,000 baht. This was followed by the Northern region where 25.5 per cent of its households belonged to this category. At the national level, 22.2 per cent of the total number of households belong to this category.

Table 4.3
Income Distribution among Household Groups in Different Regions,
Using Income Categories of 1973

Income Class Regions	Under 6,000 baht	From 6,000 to 29,999 baht	Over 30,000 baht	Total
North	25.5	70.1	4.4	100.0
Northeast	41.1	49.6	9.3	100.0
South	15.2	74.3	10.5	100.0
Central*	4.1	78.5	17.4	100.0
Bangkok	0.7	54.8	44.5	100.0
Whole Kingdom	22.2	64.6	13.2	100.0

* Not including the Bangkok Metropolitan area.

Most of the households in the middle income group, earning an annual income within the 6,000 to 29,999 baht range can be found in the Central Region. Households in the top income group, earning an annual income of over 30,000 baht are found mainly in the Bangkok Metropolitan area. In the Northeast and Northern regions, household groups with an annual income of over 30,000 baht were scarce in number, accounting for only 9.3 per cent and 4.4 per cent of total number of households in each region respectively.

It can be concluded that the highest proportion of households in the lowest income group are found in the Northeast and in the Northern regions. The distribution of households by income groups in the southern region was similar to the national distribution pattern. As for the Bangkok Metropolitan area the number of households in the lowest income group amounted to only 0.7 per cent of the total number of households in the Metropolitan area. The number of households in the highest income bracket of over 30,000 baht per annum constituted 44.5 per cent of the total number of households in Bangkok. This shows that a considerable degree of income inequality exists, in terms of household groups classified by income categories, especially if the Central region is compared to the Northeast and Northern regions.

Thus income distribution by broad occupational groups and by income groups is still very inequitable. Studies in the field of income distribution conclude that this inequality is the result of three basic factors:—

- (1) Differences in production structures and problems of increasing levels of production.
- (2) Differences in the pattern of ownership and the amount of factors of production available.
- (3) Policies in the past concentrated on the expansion of the overall economic system and neglected income distribution. As there was a lack of a definite income distribution policy, no guideline was provided for the adjustment of other policies and the design of development projects to bring about a more equitable distribution of income.

3. Regional and Specific Areas Development Strategies

In order to generate a higher rate of growth in the peripheral regions and thus bring about a more equitable distribution of income in accordance with the objectives and main targets of the Fourth Plan, the following development strategies for regions and communities will be adopted:—

3.1 Income Distribution and Poverty Eradication

3.1.1 Target Areas: Various target areas will be selected for accelerated development. These target areas will be areas of lowest income and/or areas with special problems hindering local development. In general, greater effort will be made to accelerate growth in the following target areas:—

(1) The poorest and economically most backward rural areas, especially areas in the North and Northeast regions.

(2) Urban areas with unemployment problems, particularly those located in the North and Northeast regions.

3.1.2 Target Groups : Target groups which deserve special development assistance will be identified. Primal focus will be on the rural agricultural workers. Attention will be given in particular to the poorest of this group:- those with land tenure problems and the landless labourers who cannot even afford to rent land for cultivation. Secondly, development assistance for the urban poor will be expanded.

3.2 The Improvement of Regional and Community Production Structures

3.2.1 Efforts will be made to diversify and expand agricultural production in various regions, changwats (provinces) and special problem areas. Guidelines for achieving this include the following:-

(1) Special effort will be made to stimulate agricultural production in various regions through a more efficient utilization of the limited amount of land suitable for cultivation and a more optimum use of water resources.

(2) As the Central Region has the largest number of landless farmers, strategies for developing this region must give highest priority to land reform programmes for changing the structure of land ownership and for bringing about changes in the agricultural production pattern.

3.2.2 Non-agricultural sectors must be expanded to bring about a more diversified regional economy and more economic stability. Guidelines for achieving this include the following:-

(1) More importance will be given to the carrying out of surveys to locate deposits of minerals and other natural resources and to the formulation of systematic plans for the orderly development of these resources.

(2) Comprehensive package programmes for rural development will be formulated for strengthening the linkages between agricultural production and the processing of agricultural products and raw materials. This should help to create more jobs in urban areas, especially in the major urban growth centres of each region. These urban areas can help to create more prosperity in areas outside Bangkok. In addition, they will serve as foundations for the further development of rural agricultural communities.

3.3 The Development of Specific Areas

Regional development must reach people in the poorest and most backward areas and provide economic and social security for the people living in these

areas. Special attention will also be given to areas with specific social and political problems. Guidelines for developing the specific areas that have already been identified in each major region can be summarised as follows:—

3.3.1 The Northern Region

(1) In the upper part of the Northern region, an acute shortage of arable land is the main constraint on development. Poor living conditions have resulted in a large amount of migration out of these areas. At the same time, the changwats (provinces) in the lower part of the Northern region such as Tak and Kamphang Phet have to absorb considerable inflows of migrants. The Fourth Plan aims at raising output to a level that is sufficient to meet the needs of the population in each area. In particular, it is necessary to find ways of ensuring that the upper part of the Northern region gets a sufficient amount of water from the Ping, the Wang, the Yom and the Nan rivers for irrigation purposes. Flood control measures for the upper of the Northern region is also imperative, especially the development of large water tanks such as the Mae Khwang, Mae Kham, Mae Chang and Huai Sak projects to divert water into the existing system of diversion weirs which would cover about 910,000 rai of agricultural land.

(2) It is necessary to raise the economic and social status of minority groups and natives of the highland areas of the region. At the same time, supervision of land use for highland agricultural development and restrictions on the movement of those living in the highlands are necessary to check further deforestation and destruction of watershed areas.

3.3.2 The Northeast Region

(1) In this region, there are several poverty-stricken areas particularly in Mahasarakham, Kalasin, and Roi Et Provinces where the population density in terms of the amount of cultivated land that exists is very high. In these areas, considerable out-migration has already begun. Increased efforts are needed to speed up work on the comprehensive package programmes for rural development, small irrigation systems and job promotion programmes for the people in these areas.

(2) In areas with high aridity such as those in Buriram, Si Saket, the lower part of Ubon Ratchathani, Mahasarakham, and Nong Khai, additional water supplies must be provided. This will involve the dredging of swamps, improving ditch and dike systems and the afforestation of watershed areas in the upper reaches of the Nam Mun and Nam Chi rivers as well as in the Phu Parn highland areas.

(3) Areas with special problems such as the Kula Rong Hai plain which extends into five changwats (provinces) in the Northeast will have to be developed through the implementation of a comprehensive package programme. Such a programme must incorporate plans for land and water resources development as well as community development schemes.

3.3.3 The Southern Region

(1) Satun, Yala, Pattani and Narathiwat, the four Southern border provinces are the poorest provinces in the Southern region. As the majority of the population in these four southern most provinces are ethnically and religiously different from the rest of the country, the economic programmes that are to be implemented to bring about overall development in these provinces must be consonant with the special religious and cultural characteristics of this area. Infrastructural projects and social development projects in particular will be given high priority for the future development of these provinces.

(2) In the provinces of Phattalung, Nakorn Si Thammarat, Satun, Yala, Pattani and Narathiwat special integrated rural development programmes will be implemented. These programmes include the preparation of special areas for large-scale investment and projects for improving local education and health services. Areas which will receive special attention are the rice growing areas in the provinces of Phatthalung and Nakhon Si Thammarat which have a high population density and much poverty. Special attention will also be given to the vast Prasaeng-Kiencha plain in Surat Thani province which is experiencing a considerable inflow of migrants and already has a large number of poor families.

3.3.4 The Central Region

(1) Areas designated for land reform will be expanded as much as possible, particularly those areas where land tenure problems are most acute. The provinces in the Chao Phraya river basin where the largest number of landless farmers are to be found will get special attention.

(2) The reform of the agricultural economy and the reconstruction of rural areas will be important for stimulating popular participation in the development process in these special areas. The implementation of these reforms will contribute significantly to the alleviation of political problems and to the promotion of security in rural areas.

3.4 Employment Promotion outside Bangkok and in Local Areas

During the preceding Third Plan period, the level of unemployment in Thailand increased from about 1 per cent of the national labour force in 1971 to about 7 per cent in 1976. At present, there are over one million persons unemployed and about 90 per cent of this total living in areas outside Bangkok, particularly in the Northeast, the North, and the Central Regions. This is mainly because the rate of increase in the labour force is high coupled with the fact that the economic structure of various regions in Thailand has not changed very much over the years. In addition, as urban areas outside Bangkok have not been able to absorb a sufficient number of people entering the labour market, most of the additions to the labour force have had to remain in the rural agricultural sector. The measures for that have been formulated for alleviating the unemployment problem include the following:—

3.4.1 Short-Term Measures

(1) Construction projects will be increased, both in Bangkok and in provincial areas to generate more employment opportunities. In certain cases, the Government will provide financial assistance for projects of local agencies which generate employment. To alleviate these immediate problems, the Government will also expand job training and job placement services.

(2) The cultivation of cash crops will be promoted and other measures to stimulate the livestock and fisheries sectors will be implemented to further diversify the agricultural sector. In addition, agricultural credit will be expanded, scarce production inputs will be provided and marketing services will be improved. Details relating to these measures are presented in Chapter two of section three.

3.4.2 Long-Term Measures

(1) The investment in agro-industries and services in rural areas of different regions will be promoted and support will be given to the development of urban growth centres in the various regions. In addition, the Government will encourage the development of medium-size communities in different regions to serve as main agricultural centres.

(2) The Government will carry out a revision of the prices of production inputs, review the price guarantee programme for agricultural products and take measures for promoting credit expansion and agricultural institutions.

(3) The pricing policies of agencies providing infrastructural services and public utilities will be reviewed with a view to promote regional and local development.

(4) The Government will decentralise the decision-making process and revise the system of local government financing to make it more responsive to the needs of local communities.

4. Measures to Promote Income Distribution

4.1 Measures to Eradicate Rural Poverty

In addition to tackling problems related to production efficiency, production diversification, marketing and the pricing system, the Government must deal with some other problems as well as to achieve more equitable income distribution. Guidelines for dealing with these other problems are summarised below:—

4.1.1 To help farmers in the short-run and in the long-run, systematic planning is required. An overall plan should be prepared to deal with the basic

problems encountered by farmers, especially the problems relating to land tenure, debts, and other legal problems concerning the agriculture law court and the Farm Rent Control Act.

4.1.2 The Labour Act should be revised so as to extend its provisions to cover hired labourers in the agricultural sector, especially in the irrigated agricultural zones where there are a large number of hired labourers.

4.1.3 Social services for the benefit of the rural poor by stressing on health, out-of-school education, and rural public services should be expanded and strengthened (see details in Chapters 6 and 7, Section 3).

4.2 Measures to Assist Urban Poor

Low income people in most cases do not receive adequate payments for their work. Therefore, it is necessary to revise wage rates and welfare payments in accordance with changes in labour productivity and the cost of living (see details in Chapter 7 Section 3). At the same time, the problem of labour productivity has to be given special attention, as most of the urban poor are unskilled workers in small businesses or industries or merely labourers in temporary jobs. Corrective measures to be laid down include the following:—

4.2.1 Short training courses for unskilled labourers will be arranged to raise the labour efficiency and these courses may be organized at Labour Training Centres or included in the Mobile Occupational Training Project.

4.2.2 Regional job placement services will be improved to expand coverage and to provide information on changes in the labour market situation to relevant groups of people such as employers, employees, and regional job placement centres.

4.2.3 The Government will promote employment generating activities of both the public and private sectors via encouraging the use of labour-intensive methods of production and by supporting the transfer of labour from labour-surplus to labour-deficit areas.

In addition, the provision of other social services will be considered, including the following:—

(1) Providing public utilities to poor people at a lower rate than for other people.

(2) Providing basic commodities to poor people at a lower rate than for other people, including low income housing.

(3) Implementation of a social security programme (see details in Chapters 6 and to 7, Section 3).

4.3 Monetary and Fiscal Measures

In addition to the various measures proposed in previous sections, it is necessary to use monetary and fiscal measures for alleviating problems related to income disparities. For example,:

4.3.1 The tax structure will have to be revised to help check the adverse trend in income disparities in Thailand. It may be necessary to introduce new taxes relating to inheritance and capital gains as well as revising tax rates on taxes already being collected such as the land tax.

4.3.2 Monetary and fiscal measures can be utilised to promote the types of investments which can help to alleviate problems related with income disparities such as channelling funds into low income housing projects, mass transit system, labour-intensive projects and in other areas which would result in direct benefits for the poor.

CHAPTER V

POPULATION, MANPOWER, EMPLOYMENT, AND WAGES

One of the basic objectives of the Fourth Plan aims at accelerate economic recovery and promoting growth pattern that will solve the problem of unemployment which had increased so rapidly during the Third Plan. In addition, the Fourth Plan aims at reducing the population growth rate and in improving the quality of human resources to meet manpower requirements in the long run. Population, the stock of human resources of the country, constitutes a vital factor in the success or failure of any national development plan. It is therefore necessary to thoroughly analyse the past and present circumstances concerning population, manpower and employment, before laying down guidelines to deal with problems associated with these factors. In the Fourth Plan, there are seven main issues for which development strategies and policies are outlined in detail:

- (1) Growth in population and labour force
- (2) Population distribution and human settlement
- (3) Development of the quality of human resources
- (4) Labour and employment
- (5) Salary and wage increase
- (6) Development of public administration and management
- (7) Manpower development in the civil service and in state enterprises

1. Growth in Population and Labour Force

1.1 Problems and Obstacles

In 1971 Thailand was the 16th most populous nation in the world and ranked third in Asia in terms of the growth rate of population. High rates of population growth in the past aggravated the problems of poverty, inadequate housing, shortages in land suitable for cultivation and lack of social services. In the Third Plan government decided to reduce the annual rate of population growth from 3 per cent to 2.5 per cent.

The assessment of the results of the family planning programme and the survey of demographic development during the Third Plan period concluded that the average rate of population growth fell to 2.7 per cent. In 1976, Thailand's population stood at 42.96 million. Population growth during the Third Plan period resulted in an increase in the labour force at the annual rate of 2.6 per cent. It is anticipated that this growth rate will drop to 2.3 per cent during the Fourth Plan period. This would mean that the labour force would increase from 19.2 million in 1977 to 21.6 million in 1981. This is equivalent to an absolute total increase of 2.39 million people during the Fourth Plan period, or at an average of about 478,000 people per year (details in table 5.1).

Table 5.1
Population with Age 15 Years and Above, Labour Force
and Participation Rate, October 1, 1970-1981

(1,000)

Year	Population	Labour Force	Participation Rate
1970	20,216	16,502	81.63
1971	20,874	16,928	81.10
1972	21,559	17,363	80.54
1973	22,272	17,814	79.98
1974	23,011	18,288	79.48
1975	23,781	18,771	78.93
1976	24,578	19,211	78.16
1977	25,402	19,670	77.43
1978	26,250	20,133	76.70
1979	27,123	20,550	75.77
1980	28,033	21,028	75.01
1981	28,986	21,601	74.52

The envisaged decline in the growth rate of the labour force from 2.6 per cent to 2.3 per cent per annum in the Fourth Plan period will, for the most part, be the result of the educational development achieved in the preceding Plan. The expansion in educational facilities provided opportunities for many Thai people to attain higher levels of education and to stay longer in educational institutions, thus remain outside the labour force for a longer period. The effect of the slower growth rate of population that was achieved in the Third Plan on the size of the labour force will only materialize after a gestation period of 15 years. The main problems and obstacles that were encountered in the attempt to reduce the rate of population growth during the Third Plan period include the following.

1.1.1 There was a lack of understanding concerning family planning and population matters. Inadequate promotional activities and poor dissemination of knowledge led to insufficient support from administrators, government officials, local leaders, and the public at large.

1.1.2 Budget allocations for family planning programmes and population matters in the past were very limited. Work in this field was thus dependent to a considerable extent on foreign aid which was not pledged on a regular basis. In some

instances, these foreign donors in sticking rigidly to their own policies encouraged the implementation of programmes which were not the most appropriate for Thailand. Moreover, some of the foreign aid received for projects in this field was tied up with other projects such as those on maternal and infantile health care, and those concerning education, research and training, for some of these projects, certain coordination problems arose.

1.1.3 There was a shortage of officials operating in the family planning projects. The number of those working in these projects fell far short of the desired number. In addition, most of the senior officials were only working on these projects on a part-time basis and had other responsibilities. Junior officials in the field also worked under various constraints. Consequently, the envisaged targets for population growth during the Third Plan were not fully achieved.

1.1.4 Family planning services have not yet reached rural inhabitants in remote and barren areas nor those living in urban squatter settlements.

1.1.5 All members of the general public, including children and young people should be given the type of education which will enable them to understand and realize the magnitude of the population problem and its economic and social consequences for the family, the community, the country, and the world. At the appropriate age, they should be taught the preventive methods concerning child conception, and the correct concepts of family planning so that they will be able to conscientiously determine the size of their own family. However, this kind of education has not as yet received sufficient interest and support from those concerned, and so measures that are required for promoting this type of education have not been fully implemented.

1.1.6 The last and most crucial problem was that an overall plan to coordinate efforts in this field for various activities of relevant agencies did not exist. This was because basic data and statistics at the regional level that was needed to formulate such a plan either did not exist or were inadequate. Thus there was a lack of coordination among agencies concerned which had the effect of lowering the level of efficiency in the overall programme. More will be said later on the issue of coordination.

1.2 Demographic Objectives and policy Guidelines

The Fourth Plan has as an objective the reduction of the rate of population growth from 2.5 per cent per annum at the beginning of the Plan period to the rate of 2.1 per cent per annum in the last year of the Plan. This goal can be achieved by cutting down the birth rate from 34.5 pro mille^{1/} to 29.0 pro mille while the death rate drops from 9.0 pro mille to 8.0 pro mille. If this objective is achieved, the average annual rate of population growth during the Plan period will come down to 2.2 per cent. with the population size increasing from 42.96 million people in 1976 to 48.18 million people in 1981 as shown in table 5.2

^{1/} Per thousand

Table 5.2
Population Projections by Age and Sex
1970, 1977 and 1981 (July)

(1,000)

Age group	1970		1977		1981	
	Male	Female	Male	Female	Male	Female
0-4	3,243	3,113	3,428	3,309	3,357	3,237
5-9	2,746	3,664	3,257	3,145	3,349	3,242
10-14	2,316	2,235	2,904	2,805	3,179	3,068
15-19	2,003	1,935	2,450	2,377	2,787	2,701
20-24	1,702	1,631	2,071	2,002	2,334	2,266
25-29	1,279	1,248	1,772	1,712	1,981	1,922
30-34	985	1,013	1,418	1,371	1,685	1,627
35-39	892	935	1,049	1,055	1,305	1,271
40-44	770	798	867	913	972	994
45-49	649	676	776	821	827	880
50-54	493	518	644	680	715	764
55-59	402	428	498	538	577	624
60-64	303	327	366	404	421	469
65-69	215	241	269	306	298	345
70 and above	253	357	356	476	422	560
Total	18,251	19,119	22,125	21,914	24,209	23,970

If the trend in population distribution follows the past pattern, the regional and provincial distribution of population will assume the structure shown in table 5.3. However, if the policy guidelines (see next sub-section) concerning population distribution and human settlement are implemented effectively, the population in Bangkok-Thonburi will be less than 5.28 million in 1981 whereas the population in other provinces will exceed the numbers shown in table 5.3

Table 5.3
Population Projections by Region, Rural, and Urban^{a/} 1972-1981^{b/}

Region	Population (1,000)												Growth rate ^{d/}					
	1972			1976			1977			1981			Third Plan			Fourth Plan		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
Whole Kingdom	38,592	7,467	31,125	42,960	8,761	34,199	44,039	9,039	35,000	48,179	10,212	37,967	2.7	3.20	2.40	2.29	3.07	2.1
Central																		
Bangkok Metropolis	3,708	3,708	-	4,351	4,351	-	4,531	4,531	-	5,341	5,341	-	4.0	4.10	-	4.10	4.10	-
Central ^{c/}	3,014	415	2,599	3,240	520	2,720	3,289	528	2,761	3,440	546	2,894	1.9	1.15	2.01	1.20	1.00	1.2
East	2,252	259	1,993	2,575	310	2,265	2,666	321	2,345	3,082	371	2,711	3.3	4.28	3.20	3.60	3.59	3.6
West	2,912	396	2,516	3,131	438	2,693	3,181	444	2,737	3,328	465	2,863	1.9	2.45	1.81	1.22	1.20	1.2
Northeast	13,588	1,074	12,514	15,188	1,308	13,880	15,574	1,340	14,234	17,008	1,464	15,544	2.8	2.62	2.80	2.26	2.25	2.3
North	8,323	1,024	7,299	9,151	1,157	7,994	9,354	1,182	8,172	10,093	1,276	8,817	2.4	2.82	2.20	1.96	1.96	2.0
South	4,795	591	4,204	5,324	677	4,647	5,444	693	4,751	5,827	749	5,138	2.7	3.24	2.40	2.01	2.02	2.0

a/ Urban area is defined as an area with a population density of 1,000 per square Kilometre and having a population of 5,000 or more 1977 and 1981 are estimated

b/ Mid-year population (July 1.)

c/ Excluding Bangkok Metropolis

d/ Mid-year population from 1971-1976 for the Third Plan and from 1976-1981 for the Fourth Plan.

Sources: 1. Population by region estimated by the Working group on Population of the sub-committee on Population Policy and Planning.
 2. Population by Rural-Urban estimated by the Population and Manpower Planning Division, NESDB

To attain the above - mentioned objectives, emphasis must be put on expanding family planning services to people living in remote rural areas and to those living in urban squatter settlements who are not as yet fully accustomed to the concept of family planning. Moreover, the Government must seriously promote and provide support for operations and projects concerning demographic matters by adhering to a number of operational guidelines and rules. This is expanded in the next sub - section.

1.2.1 Guidelines on Family Planning Work

(1) Agencies which are responsible for family planning programmes should be given adequate financial support and provided with sufficient manpower to enable them to successfully implement these programmes and to attain the family planning objectives. One of the objectives is to render services to a total of 3.03 million people including those already practicing family planning as well as new receptors.

(2) Official regulations relating to subsidies for meeting expenses in raising children, for medical treatment and for educational purposes, as well as the allowance for maternal leave which are granted to civil servants and personnel of state enterprises should be revised and made consistent with family planning objectives. At present, these subsidies and benefits are given to all children of civil servants and staff of state enterprises with no limitation on the number of children. In future, these subsidies and benefits should only be available for the first four children of each civil servant or staff member of state enterprises. These new regulations, however, should not be applied to those who already have more than four children.

(3) The law stipulating that sterilization treatment be given only to women who have given birth to at least four children should be revised. The desire for sterilization treatment should be left to the discretion of the applicants and should not be judged by the authorities concerned on the basis of the number of children.

(4) At present there are a number of abortion clinics rendering services to pregnant women who do not wish to have children. Some clinics do not provide adequate medical treatment and endanger the lives of those undergoing this treatment. Due to this malpractice, there are many who have to be hospitalized after receiving this treatment. This puts an additional strain on the medical services provided by the Government and thorough research on the positive and negative effects of these abortion practices should be carried out. Regulation 305 of the Criminal Code of Law relating to abortion which stipulates that doctors can only provide abortion treatment to preserve a woman's health or social position (when a woman is pregnant after being raped), should be revised so that abortion can legally be performed for a number of other valid reasons. This would help to limit the number of illegal abortions and related strains on medical services provided by the Government.

(5) The Labour Protection Act should be revised to allow employers to reduce the amount of privileges related to maternal leave from the fifth child onwards. Moreover, the Government should take steps to persuade private concerns that provide maternity and child support for their staff to follow the Government's example by limiting such benefits to the first four children of their staff. Exemption should be given to those who have been promised this right prior to the application of this revision.

(6) Fiscal incentives that have been used successfully in other countries to reduce birth rates should be carefully studied and adapted for use in Thailand.

(7) The Government should pay for the sterilization costs for male and female low-ranking officials, government employees, and personnel of state enterprises.

(8) Other public and private agencies besides the Ministry of Public Health should take a more active role in promoting and providing family planning services. This would include the provision of technical assistance, equipment and medical supplies.

1.2.2 Guidelines for Future Work in the Population Field

(1) Matters relating to population should be included in school curricula and should be taught during out of school hours as well. How this should be done is elaborated in what follows.

(a) It is necessary to teach population and family planning matters in a frank and open manner in order to prevent misunderstandings and subsequent mistakes. As such, it is thus crucial to have properly qualified teachers who are knowledgeable in this field. Teachers of this important subject should receive special training in this field. Those selected for this type of training should have an aptitude for population matters and should be persons who can disseminate knowledge most effectively. The groups of people who should be selected as teachers in this field include those who have taught for some time, students in teacher training colleges, development officers, rural leaders, district chiefs, village headmen and district doctors.

(b) In preparing curricula and textbooks on this subject, it is necessary to take explicit account of the level of knowledge of those who are to be trained. Those responsible for these training courses should work and consult closely with one another both in finding ways of incorporating new knowledge in various subjects and in constantly improving the curricula and textbooks and adapting them to the changing circumstances of the country.

(c) Knowledge and information relating to population matters should be widely spread by means of the distribution of documents to schools and offices, via the mass media, by setting up demographic libraries and by sending officials to personally teach and train young people and the public at large.

(d) The Government should encourage extensive research into population affairs.

(e) Projects and programmes in this field should be monitored and evaluated regularly.

(2) Since work in the field of population involves activities in various sectors under the responsibility of a large number of agencies, some improvement in the coordination of all these activities is needed. As such it will be necessary to establish one to formulate, coordinate and evaluate the various policies, programmes and projects related to population matters.

(3) Work in the population field requires adequate funding, technical know-how, and a substantial amount of teaching materials. The Government will therefore ensure that these operations are allocated sufficient funds from the Government budget. At the same time, foreign aid will be requested in the form of funds and technical assistance, including equipment and materials which are necessary for promoting activities such as research, conducting experiments drafting of curricula, as well as compiling and producing teaching material. During the Fourth Plan it is estimated that about 38.21 million baht will be spent on out-of-school training in the field of population. Government expenditure for teaching and training people in population matters within schools cannot be stated categorically as funds for this type of education are included in the education budget for schooling at various levels and form part of a number of other activities in education sector.

2. Population Distribution and Human Settlement

2.1 Problems and Obstacles

The present population distribution pattern is the by-product of interactions of economic, social, and political factors. This process has created an imbalance in the pattern of human settlement in the country as can be observed in table 5.4.

Table 5.4
Area, Population, Density, Regional Share of GDP and GDP Per Capita by Region in 1970-1981

Year	Area (Km ²) and Population (thousand)					Population Density (per Km ²)					Percentage Share of GDP					GDP Per Capita (Baht)				
	Central		Northeast	North	South	Central		Northeast	North	South	Central		Northeast	North	South	Central		Northeast	North	South
	Metropolis	Other Provinces				Metropolis	Other Provinces				Metropolis	Other Provinces				Metropolis	Other Provinces			
Area	1,547	102,032	170,226	170,006	70,189	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Population																				
1970	3,253	7,966	12,715	7,919	4,517	2,103	78	75	47	64	28.6	27.4	16.0	15.2	12.8	9,954	4,231	1,501	2,306	3,415
1971	3,569	7,978	13,173	8,110	4,655	2,307	78	77	48	66	28.4	28.8	15.4	14.4	13.0	10,314	4,671	1,513	2,300	3,633
1972	3,710	8,175	13,581	8,330	4,796	2,398	80	80	49	68	29.0	29.6	14.8	13.3	13.3	10,585	4,888	1,469	2,153	3,769
1976	4,343	8,948	15,169	9,174	5,323	2,807	88	89	54	76	29.9	29.9	14.8	13.2	12.2	12,018	5,948	1,523	2,818	4,019
1977	4,520	9,134	15,559	9,380	5,446	2,922	90	91	55	78	30.5	29.5	14.8	13.2	12.0	12,625	6,043	1,777	2,632	4,155
1981	5,282	9,859	17,000	10,143	5,895	3,414	97	100	60	84	32.0	30.7	14.0	12.1	11.2	14,863	7,636	2,017	2,948	4,653

Table 5.4 shows that Bangkok-Thonburi, with an area of about 1,547 square kilometres, experienced an increase in population density from 2,277 people per square kilometre in 1970 to 2,807 people per square kilometre in 1976. The population density of the Bangkok-Thonburi area is expected to reach approximately 3,414 people per square kilometre in 1981 while areas in all the other provinces are not expected to exceed 100 people per square kilometre by the end of the Fourth Plan period. This overcrowding in the Bangkok-Thonburi area causes a number of serious problems, including the deterioration of the environment, the expansion of squatter areas, unemployment, high crime rates and incomparable traffic congestion. The present pattern of human settlement in Thailand to a considerable extent is the result of population migration which has the following characteristics

2.1.1 Intra-national migration consists mainly of the migration from one rural area to another mostly in search of better farmland. With respect to rural-urban migration, the flow of migrants into the Bangkok-Thonburi region has been the most significant, followed by the flow to the Northeastern urban centres where a large number of jobs were created by the presence of American military bases in that part of Thailand. Migration motivated by the search for new farmland has caused considerable deterioration to natural resources such as the destruction of forests in the North. The substantial flows of migrants into the sprawling urban areas in Central Thailand such as those in the provinces of Nonthaburi, Pathumthani, Samutprakarn, Samutsakorn and Nakorn Prathom, or into the satellite towns of the Bangkok Metropolitan area are mainly in response to the growth and development of the industrial sector in these areas.

2.1.2 Throughout the country, many different migration patterns have emerged. This can be explained mainly in terms of the differences in the level of development of each region and each province.

Furthermore, the incoming streams of foreign political refugees fleeing from the wars in Laos, Vietnam, and Cambodia have rapidly grown in significance. The influx of political refugees into Thailand must be halted and these refugees to the extent possible, should be encouraged to return to their homeland. Otherwise, they could become a destabilizing factor and hinder the attainment of the population objectives of the Fourth Plan even if all the family planning projects achieve their envisaged results. This refugee issue could also have an economic and social impact on local communities and consequences for the nation as a whole.

2.2 Population Distribution Policies

2.2.1 The migration rates to the Bangkok-Thonburi region and to other urban areas in some provinces must be reduced.

2.2.2 Measures to stimulate and support the migration out of the Bangkok-Thonburi area into adjacent areas and other provinces.

2.2.3 Intra-regional migration is to be supported more than interregional migration.

2.2.4 With respect to rural-urban migration, support should be given to the flow of migrants into the principal urban centres of each region, in line with the guidelines laid down for regional development.

2.2.5 The influx of refugees, particularly those from neighbouring countries, should be halted. Those who have already entered Thailand should be encouraged to return to their homelands or to other third countries.

3. Development of the Quality of Human Resources

3.1 Problems and Obstacles

The Government has been developing the quality of human resources in Thailand for a long time, mainly through the provision of public health services, education and training. Nevertheless, the quality of the human resources in Thailand is still not as high as it should be, due to many factors. Among the most crucial factors or problems are those related to food and nutrition, public health and manpower development. The first two problems and recommended solutions to these problems are dealt with in detail in the chapter on the distribution of social services (Chapter 7, Part III), so only the issue of manpower development will be discussed further in this section. Manpower development concerns both the development of formal and non-formal education, as well as general and vocational training. The main problems encountered in each of these issues and recommended approaches are presented in the next sub-sections.

3.1.1 Formal Education. Considerable problems and obstacles can be found at all levels of education. The most crucial ones include shortages of schools, classrooms, textbooks, teaching equipment, equipment for conducting experiments and qualified and experienced teachers. Moreover, formal education in the past could not be expanded to cover the whole country while higher education tended to produce the kinds of manpower that did not match the demand of the employment market. In addition, the weaknesses of the administrative system tended to aggravate the problems of formal education. For these reasons, reforms of the education system must be implemented. These measures are presented in detail in the sections relating to educational development in Chapter seven of Part three which deals with the distribution of social services.

3.1.2 Non-Formal Education. The supply of non-formal education to be discussed here refers only to the short-term vocational and general training that prepares people for the labour market or provides knowledge and experience to the unemployed and soldiers who have been relieved of their duties. Those who are trained are expected to be able to practice their newly-learned vocation within a short period of time. For those who are already employed, such non-formal training should enhance their ability and enable them to earn a higher income.

The main problem of short-term vocational training projects in the past were discrepancies between the types of training provided by government agencies and the needs of the labour market or contents of the training courses and actual on-the-job requirements. While Thailand is basically an agricultural country with about 80 per cent of its population in the agricultural sector, the vocational training programmes organized by various agencies mostly emphasise activities in the industrial and service sectors as shown in table 5.5 below.

Table 5.5
Cost of Training and Number of Vocational Trainees
By Training Agencies: 1972-1973

Agencies	Cost			No. of Enrolments and Graduates			
	Category	Year		1972		1963	
		1972	1973	Enrolment	Graduates	Enrolment	Graduates
1. Dept. of Elementary Education	Budget	45,178,200	52,491,900	44,244	-	46,396	-
	Aid	-	-	-	-	-	-
2. Dept. of Vocational Education	Budget	8,995,746	10,801,134	11,186	6,907	14,782	9,225
	Aid	1,680,839	1,976,648				
3. A.R.D.	Budget	2,347,300	2,546,540	271	271	542	542
	Aid	-	-				
4. National Youth Office	Budget	7,690,919	9,388,300	225	-	300	-
	Aid	4,100,000					
5. N.S.C.	Budget	1,241,000	359,200	350	377	270	260
	Aid	-	-				
6. Institute of Skill Development	Budget	7,327,700	8,730,000	2,012	1,355	2,499	1,522
	Aid	205,000,000	-				
7. Community Development Dept.	Budget	4,411,992	5,198,339	26,291*	-	37,052**	-
	Aid	894,124	240,800				
8. Public Welfare Dept.	Budget	22,010,640	20,042,610	1,428	-	1,258	-
	Aid	1,052,272	887,845				
9. Penitentiary Dept.	Budget	1,066,630	1,226,377	5,804	2,003	5,208	1,796
	Aid	-	-				
10. Industrial Promotion Dept.	Budget	7,097,000	7,298,400	1,826	-	3,060	-
	Aid	-	-				
11. Dept. of Agricultural Techniques	Budget	2,329,500	2,617,390	1,367	-	1,492	-
	Aid	-	-				
12. Cooperatives Promotion Dept.	Budget	1,258,249	1,145,318	145	-	138	-
	Aid	-	-				
13. Juvenile Court.	Budget	-	-	417	-	380	-
	Aid	-	-				
Total	Budget	110,954,876	121,845,508	-	-	-	-
	Aid	212,727,235	3,105,293	95,566	-	113,377	-
	Total	323,682,111	124,950,801		10,913		13,345

* Including Village-Development Board trainees of 23,082

** Including Village-Development Board trainees of 36,646

The quality of the training with only a few exceptions, must be considered to be below standard and not geared to the needs of the labour market. This stemmed from the lack of practical experience on the part of the teachers in charge of these training courses and their lack of knowledge of the modern technology that is being applied in various industries. Moreover, about 50 per cent of the trainees in the short-term vocational training courses that have been organized by government agencies, especially in the courses that were offered to the people in general, dropped out before completing the courses due to lack of financial support for the purchase of learning materials and lack of interest in the subjects taught. These training facilities which were designed to assist poor people who previously lacked the opportunity to acquire certain skills for earning a higher income thus did not achieve their envisaged targets. Employers, however, have shown interest in these training courses and have sent a number of their workers to attend these courses to upgrade the skills of their workers.

3.2 Vocational and General Training Policies

3.2.1 Target Groups

During the Fourth Plan the content and direction of training courses will be improved significantly and changes will be made to ensure that course contents are consonant with the needs of the labour market and the economy. Vocational training facilities should reach the following four important target-groups:

- (1) those in the low-income group both in urban and rural areas
- (2) newcomers to the labour force looking for employment
- (3) the unemployed with little skill and knowledge or those with skills that do not meet the requirements of labour market
- (4) handicapped people, such as convicts, blind persons and prostitutes

3.2.2 Operational Guidelines

Vocational training projects and plans which are included in the Fourth Plan should, besides attempting to reach these four target-groups aim at the following objectives.

- (1) to strike a balance between the manpower requirements and the existing manpower plus the manpower to be produced both in terms of quantity and quality
- (2) to provide additional knowledge for those in rural areas which would be of use to their main occupations as well as supporting activities so that they can increase their incomes and raise their standards of living

(3) to improve the skill of the urban labour force to enable them to earn higher incomes

(4) to alleviate the problems of labour unrest by improving labour relations

4. Labour Force and Employment

4.1 Problems and Obstacles

During the Third Plan period, especially between 1973-1975, Thailand experienced considerable economic, social and political problems and changes. At the same time, the growth rate of the labour force was increasing at a relatively high rate. As a result, there was a significant increase in the level of unemployment, reaching an annual average of 46,500 people or about 3.5 to 5.0 per cent of the total labour force. It is estimated that in 1976, the number of unemployed persons will reach 1.05 million people or about 5.4 of the total labour force as indicated in table 5.6 below.

Table 5.6
Labour Force, Employment, and Unemployment
1972-1981 (October 1)

(in thousands)

Year	Labour Force	Employment	Unemployment	Unemployment Rate
1972	17,363	16,503	860	5.0
1973	17,814	16,972	842	4.7
1974	18,288	17,570	718	3.9
1975	18,771	17,842	929	4.9
1976	19,211	18,165	1,046	5.4
1977	19,670	18,553	1,117	5.8
1978	20,133	18,969	1,164	5.8
1979	20,550	19,414	1,136	5.5
1980	21,028	19,890	1,138	5.4
1981	21,601	20,398	1,203	5.6
Growth rate 1972-76	2.6	2.4	5.0	—
Growth rate 1976-81	2.3	2.3	2.8	—

The average growth rate of the labour force in urban areas^{1/} during the period 1971-1973 was four times the rate of increase in rural areas.^{1/} To be more precise, during this period, the urban labour force increased at an average annual rate of 7.4 per cent while the rural labour force only expanded at a rate of 1.8 per cent per year. However, the American military withdrawal caused additional urban unemployment and some of those who became unemployed returned to their previous homes in rural areas. As a consequence, the growth rate of the urban labour force towards the end of the Third Plan period slowed down while the growth rate of the labour force in rural areas tended to rise. Due to this development, the average growth rate of the urban labour force throughout the Third Plan period was reduced to 6.6 per cent per year whereas the average growth rate of the rural labour force increased to 2.0 per cent per annum.

The sharp increase in the level of unemployment during the Third Plan period can be explained in the following terms:—

4.1.1 Structural Problems in Agricultural Production

During the Third Plan, attempts to increase agricultural production at a high rate were not so successful. Farmers, faced many disadvantages, including low agricultural prices, shortages of production inputs and variations in climatic conditions. The situation seems to be getting worse, with the relatively high rate of population expansion in rural areas and the fact that new land that is suitable for cultivation is becoming more difficult to find. Moreover, the agricultural production pattern is characterised by a large degree of underemployment.^{2/} A recent study has shown that in general, underemployment in the agricultural sector persists all year round, but there is some variation in this pattern due to seasonal factors and regional differences (See table 5.8). This type of production structure gives rise to a large and expanding pool of labour in the agricultural sector which will lead eventually to a higher level of rural and urban unemployment.

1/ An 'Urban area' is here used to mean the area within a municipal boundary and 'rural area' refers to all areas outside this municipal zone.

2/ An 'underemployed person' is defined as a person who is employed less than 20 days per month, and less than 5 hours per day. A fully employed person works at least 20 days per month and at least 5 hours per day.

Table 5.7
Projections and Growth Rates of Labour Force,
Employment and Unemployment, by Municipality
October 1972-1981

	Number (thousands)			Growth Rate (per annum)	
	1972	1977	1981	1972-76	1976-81
Whole Kingdom					
Labour Force	17,363	19,670	21,601	2.6	2.3
Employment	16,503	18,553	20,398	2.4	2.3
Unemployment	860	1,117	1,203	5.0	2.8
(Unemployment rate)	(5.0)	(5.7)	(5.6)		
Municipal areas					
Employment	2,056	2,516	3,011	5.1	4.6
Non-Municipal Areas					
Employment	14,447	16,037	17,387	1.0	2.0

Table 5.8
Seasonal Employment in Agriculture by Region

Month	Percentage of Unemployed and Underemployed Labour Force					
	Northeast (1968)		North (1969)		South (1970)	
	Un-employed	Under-employed	Un-employed	Under-employed	Un-employed	Under-employed
June	13.9	14.0	11.4	17.4	8.1	27.6
July	10.1	11.5	8.1	16.4	5.4	18.2
August	9.6	12.7	14.8	20.7	5.2	16.7
September	16.6	14.9	24.8	32.7	4.2	22.1
October	25.8	16.8	27.6	32.7	7.2	29.8
November	14.9	12.8	18.8	20.5	16.9	30.6
December	8.7	10.4	10.0	15.9	22.1	36.9
January	15.6	14.2	16.8	19.5	17.5	34.4
February	38.2	20.4	32.7	25.1	7.7	20.9
March	48.3	15.6	49.2	24.7	4.7	24.5
April	47.5	16.3	51.7	21.2	16.7	39.4
May	9.3	12.7	30.4	24.3	9.7	39.0
Total	21.5	14.4	24.7	22.6	10.5	28.3

4.1.2 Lack of New Agricultural Technology at Farm Level.

New agricultural technology at the farm level has not been developed sufficiently in Thailand. The increase in agricultural production was achieved mainly through the expansion of cultivated area. There is considerable evidence to support this statement. In 1971, an average of 18 farmers were employed per 100 rai of cultivated area. In 1976, this average dropped to 16 farmers per 100 rai. This implies that little or no modern agricultural technology had been introduced to raise the productivity per rai of land to sustain a larger number of farmers. For comparison, in 1960 Taiwan used 27 farmers per 100 rai of land while Japan employed 40 farmers per 100 rai. With this kind of structural constraint, a high rate of population growth and a limit to the amount of new land that can be put under cultivation mean a rapid increase in the level of unemployment.

4.1.3 Political Changes, Inflation, Economic Recession and Labour Unrest. became more serious from 1973 onwards and have produced depressing effects on aggregate investments, particularly in the industrial sector. The downward trend of industrial investments during 1973-75 made the industrial sector less able to absorb surplus labour from rural areas.

4.1.4 There was an imbalance in the production of higher level manpower and the demand for higher level manpower in different fields. In addition, both central and local governments did not fill all their vacant posts and ^{3/} positions. A survey on the unemployment of manpower at the high and intermediate levels indicated that the unemployment rate in these categories of manpower increased significantly during the survey period (see table 5.9).

^{3/} From a survey of the expenditure account of the Central Accounts Department in July 1974 it was found that during the period 1 June 1972 to 15 July 1974 there were 21,332 unfilled positions, 12,044 of which were at the provincial offices and 9,288 positions at offices in the Central region.

Table 5.9
Higher Education Graduates and Unemployment Estimates
by Field of Study and Level 1973-1975

Level & Field of Study	1973			1974			1975		
	Graduates ^{a/}	Unemployed ^{b/}		Graduates ^{a/}	Unemployed ^{b/}		Graduates ^{a/}	Unemployed ^{c/}	
		Number	%		Number	%		Number	%
Total	73,896	18,708	25.3	95,761	42,176	44.0	102,760	43,665	42.5
M.A. or above	1,636	—	—	1,398	62	4.4	1,473	65	4.4
Bachelor Degree	12,039	783	6.5	14,556	2,205	15.1	17,513	2,648	15.1
Humanities	944	92	9.7	949	150	15.8	919	145	15.8
Education	4,162	271	6.5	6,343	1,180	18.6	7,880	1,466	18.6
Fine Arts	143	4	2.8	174	18	10.3	174	18	10.3
Social Sciences	2,896	203	7.0	2,685	325	12.1	3,146	381	12.1
Laws	793	115	14.5	846	231	27.3	1,110	303	27.3
Sciences	478	26	5.4	667	106	15.9	619	108	17.4
Engineering	756	24	3.2	945	95	10.1	1,052	105	10.0
Medical Sciences	1,145	23	2.0	1,194	20	1.7	1,734	29	1.7
Agriculture	722	25	3.5	753	80	10.6	879	93	10.6
Diploma	7,570	1,488	19.7	7,234	2,714	37.5	9,373	3,566	38.0
General	1,676	282	16.8	1,645	364	22.1	1,921	425	22.1
Technical	5,894	1,206	20.5	5,589	2,350	42.0	7,452	3,141	42.1
Teacher Training	35,017	10,278	29.4	55,833	29,445	52.7	54,411	28,699	52.7
Vocational High School	17,634	6,159	34.9	16,740	7,750	46.3	19,990	8,687	43.5

^{a/} From Higher Education Report, Dept. of Higher Education, except for 1973 from Higher Education Report, National Education Council.

^{b/} Estimates based on Survey of the Educated Unemployment, NESDB, May and September, 1975

^{c/} Estimates

The unemployment rate increased from 25.3 per cent of the number of graduates in 1973 to 42.5 per cent in 1975. In other words, the number of unemployed graduates increased from 18,704 in 1973 and 43,665 in 1975.

4.1.5 The United States' Military Withdrawal from Thailand

made at least 90,000 people jobless. It has been estimated that the closing down of the military bases meant that 50,000 people who were employed at these bases lost their jobs. An additional 49,300 persons who earned a living by providing various services to military personnel at these bases also become unemployed.

4.2 Objectives and Policies

The Fourth Plan attaches importance to the efforts to create new jobs in harmony with the increase in the country's labour force. The aim is to hold down the rate of unemployment at a level lower than 6 per cent of the total labour force. This means that on average, not more than 1.2 million people will be unemployed during the course of the Fourth Plan. The main targets and operational guidelines concerning employment are summarized in the following sub-sections.

4.2.1 Aggregate Employment is to increase at an average rate of 2.3 per cent a year. This means that the number of persons employed will increase from 18.553 million people in 1977 to 20.398 million people in 1981. Subsequently, 2.2 million new jobs will have to be created during the Fourth Plan period. This can be achieved if the agricultural sector generates additional employment at an annual average of 2 per cent and the non-agricultural sector generates additional employment at an annual average of 3.5 per cent.

4.2.2 Urban Employment is to grow at the average rate of 4.6 per cent per year. This means that the number of persons employed in urban areas will increase from 2.52 million people in 1977 to 3.01 million people in 1981. This is equivalent to an increase of about 601,000 urban jobs during the 1976-1981 period.

4.2.3 Rural Employment is to grow at the average rate of 2 per cent per year. This means that the number of persons employed in rural areas will increase from 16.04 million people in 1977 to 17.39 million people in 1981. This is equivalent to an increase of about 1.6 million people during the 1976-1981 period (as shown in table 5.7).

4.3 Policy Guidelines and Measures

Measures to reduce the level of unemployment include the following :-

4.3.1 Long-Term Measures

(1) Top priority will be given to population policy, family planning, and education on population matters. A substantial budget and sufficient manpower for operations will be allocated to relevant agencies to slow down population expansion and to improve educational curricula. These measures are necessary for the efficient execution of the family planning projects of the Fourth Plan. In addition, various studies and research projects on family planning efforts and the appropriate size of population will be conducted in order to determine the most suitable rate of population growth for the whole country.

(2) Education and training are to be organized in such a way that manpower is produced in harmony with the requirements of the economy both in terms of quality and quantity. Educational curricula will be improved and revised so that graduates at each level of education acquire sufficient skill and knowledge to take on a productive job. High priority is also given to administrative and management training courses, including employment-oriented training in general.

(3) Rural development will be fully supported by high priority programmes such as comprehensive agricultural development at the farm level and the development of cottage and rural industries. To alleviate the unemployment problem in general and seasonal unemployment and rural underemployment in particular, rural projects must be as labour-intensive as possible. To slow down rural-urban migration, more rapid implementation of rural projects will be necessary. These crucial projects include the reform of traditional agriculture, land reform, agricultural credit expansion, improving the irrigation network, increasing the supply of potable water and expanding the electricity network. Furthermore, crop rotation must be introduced and intensively promoted in as many areas as possible along with the correct use of water from the irrigation system which should contribute to an increase in land productivity. At the same time, incentives must be given to cottage industries, the industrial processing of agricultural commodities and industries that manufacture goods to meet the needs of the rural farmers.

(4) Investment policies to create an attractive investment climate must be clearly formulated. An important role should be assigned to labour-intensive industries as already mentioned in the set of recommendations relating to the acceleration of economic recovery (Chapter 1, part 2).

(5) Transfer of technology from abroad should be encouraged for various industrial and large-scale agricultural undertakings. These imported technologies should be transformed through intensive research work to suit the country's circumstances and environment for their efficient application. Legal arrangements will be revised to facilitate the transfer and adaptation of technology from abroad.

(6) Peace in the labour movements will have to be achieved through efforts to improve labour relations. This will be presented in more detail in Chapter VI of Part III on the distribution of social services.

(7) Government rules and regulations will be revised with the view to increase the degree of flexibility in recruitment and in day to day operations. This is necessary for increasing government efficiency. In addition, various government agencies will be asked to formulate long-term manpower plans which take explicit account of such details as the retirement schedule of senior officials, present and future post vacancies and the schedule of officials due to return from training abroad. Plans for future work expansion and a schedule of required new positions should be prepared.

(8) Job-finding agencies will have to be more efficient and reliable. The administrative structure and the personnel of these agencies will be overhauled for a more efficient compilation and distribution of up-to-date documents on the labour market situation to all concerned, including employers, employees and other organizations such as educational institutions and various planning agencies.

(9) The minimum wage will be revised so that various minimum wage rates are stipulated for different type of occupations and industries rather than by geographical areas.

4.3.2 Short-Term Measures

(1) General Measures to Combat Unemployment.

Programmes for promoting rural development and the creation of jobs in rural areas should be implemented as soon as possible, particularly those programmes which already have operation plans. Project that are considered to have positive effects on long-term economic development such as the digging of ditches and secondary canals for transferring water and the repairing or construction of rural roads for immediate use should be started as soon as possible. As such, the agencies that will have to supervise or take responsibility for these projects should be organized for these jobs accordingly. The funding arrangements for these projects should, in addition, be made more flexible.

To combat unemployment in the capital, the Bangkok Metropolitan Administration must give the go-ahead to labour-intensive projects such as the widening of roads and the digging and dredging of canals. Activities of state enterprises that can create additional employment in a very short period of time such as the housing projects of the National Housing Authority should be started immediately. At the same time, overtime work in factories should be discouraged and factory owners should be encouraged to recruit more workers to do this extra work to help provide additional jobs.

(2) Unemployment of Those Who Have Complete Secondary and/or Higher Education. It is difficult to deal adequately with graduate unemployment in the short-run. It can, however, be slightly alleviated if government agencies and various state enterprises try their best to fill as many vacant positions as possible. However, some effort should first be made to shift persons from over-staffed agencies to the understaffed ones, particularly in the rural provincial offices.

5. Raising of Income and Wage Levels

From 1973 on there were frequent labour disputes in various industries. The main causes of these disputes include workers' discontent with the management, incitements from people outside firm and economic disturbances, particularly the alarming inflationary situation in 1973 and 1974 which provided some justification for the workers demand for compensation for the considerable increase in the cost of living. In most cases, the workers wanted a wage increase and some rights that they thought were unjustly withheld from them.

5.1 Problems and Obstacles

5.1.1 Between 1974 and 1975 there were three rounds of minimum wage rate increases. The first increase in January 1974 put the minimum wage rate at 16 baht per day which was raised to 20 baht in July 1974, and to 25 baht in January 1975. The geographical coverage of the minimum wage regulation was also extended to include six provinces, namely, Bangkok-Thonburi, Samut Prakarn, Nonthaburi, Prathumthani, Nakorn Prathom, and Samut Sakorn. A different minimum wage rates was set for other provinces areas. However, these increases apparently could not fully compensate for the increase in the cost of living. More labour disputes occurred in 1975. These disputes were predominantly concerned with the demand for wage increases. It was notable that quite a number of enterprises such as hotels, restaurants, and some small firms employing only a few workers did not obey the minimum wage regulation and continued to pay their employees at rates lower than 25 baht a day.

5.1.2 The Government was not able to effectively enforce the labour law mainly because of a lack of data and the fact that government officials were not fully aware of the employment practices in reality. One of the main problems is that the official minimum wage rates were to be applicable for all sorts of undertakings which had large differences in employment practices and wage structures.

5.1.3 Although workers in some industries with low wage rates were given some fringe benefits such as food, accommodation and uniforms, most of the workers still lacked job security and did not receive any fringe benefit to bring them up to a minimum standard of living.

5.2 Problem-Oriented Measures

5.2.1 The minimum wage rates must be revised to account for the changes in the cost of living.

5.2.2 Minimum wage rates and other remunerations should be determined on the basis of types of industry and skill requirement of each group of workers.

5.2.3 Fringe benefits and other welfare facilities should be adapted to suit each type of employment and the general standard of living.

5.2.4 Minimum wage rates must be enforced more effectively through such measures as improving the system of inspection of business premises.

5.2.5 Measures to prevent wildcat strikes and other types of illegal strikes must be put into effect.

5.3 Labour Welfare

With respect to employment security, most workers have not been fairly treated. Compensation for accidents that occur while working has only recently been provided via a compensation fund which was set up by the Ministry of the Interior. However, the scope of this fund is still rather limited. Apart from this, there is as yet no other type of insurance for employees, such as health insurance, old-age insurance, etc. More details relating to labour welfare can be found in Chapter VII of Part III on the distribution of social services.

6. Development of Administration and Management

6.1 Problems and Obstacles

Most of the administrators in Thailand are still unaware of the basic principles of sound management. Most of them carry out their administrative functions in a traditional and routine manner. This weakness in the field of administration and management has resulted in an inefficient use of all kinds of resources in activities relating to both production and marketing. At present, the demand for capable and experienced administrators in Thailand far exceeds supply. Competitive bidding for the more competent persons by various organizations through offers of attractive salaries and other incentives is a rather familiar story in Thailand. Many foreigners have thus been brought into Thailand for some of the administrative and management assignments. At present, the Central Personnel Administration Unit and a number of other government agencies organize some training courses in administration and management. However, the people who have passed these training courses still have not acquired the types of management skills appropriate for the top administrative jobs.

6.2 Policies and Objectives

In the Fourth Plan, the development of administrative and managerial skills will be emphasized within the formal educational system as well as outside the system in the following ways:-

6.2.1 Within the formal system, management science as a subject should be included in the school curriculum from secondary education level onwards. Higher education should also be adjusted to produce more manpower with managerial skill in compliance with the requirements of the labour market both in terms of quantity and quality.

6.2.2 Out-of-school training courses should be organized for persons in the public and private sectors who are at the administrative and managerial level. These courses must be geared to meet the needs of the public and private sectors for administrative manpower. Training courses should be provided at various levels to

adequately meet the heterogeneous demand for such manpower. As such, preliminary, intermediate and advanced training courses should be provided. These courses should cover both general administrative principles and concepts as well as more specific areas such as personnel management, financial management, production supervision and marketing methods.

6.3 Policy Measures and Conditions

6.3.1 Within Formal Education System

The teaching of the principles of administration and management in schools should impart knowledge and concepts to students in the following ways—

(1) At the secondary education level, the basics of this subject should be taught. It is necessary to get students acquainted with the concepts of teamwork, discipline, communication and human relations. This should be done by incorporating knowledge and information in this field into the teaching of various subjects in different classes and by providing optional courses on administration and management.

(2) At the higher education level, including technical colleges, management science should be incorporated in the teaching of professional subjects such as medical science and engineering. With respect to courses in business administration, certain improvements will have to be made. For example, more emphasis should be put on the application of business administration principles and concepts and the ratio between male and female students should be consistent with projected requirements of the public and private sectors for such manpower. In addition, the Government should encourage institutions of higher learning to offer evening courses in administration and management up to master's degree and diploma levels. This should provide more opportunity for those who already have a job to improve their capabilities. As such, these courses should be open to students from various fields without any specific requirement for basic knowledge in any particular subject.

6.3.2 Out-of-School Training

As for out-of-school training, the following responsibilities should be allocated among relevant agencies and institutions to make such training both economical and extensive.—

(1) Institutions of higher learning will give more importance to the training of those already working to give them additional qualifications and improve their capabilities. These institutions will organize short training courses on theoretical aspects of management.

(2) Other institutions such as the Industrial Services Institute (ISI) and Thailand Business Management Association will emphasize the training of those who have to be prepared for higher positions as well as training for improving general or any specific operations. To ease the burden on government agencies, the Government should encourage other organizations, associations and private enterprises to organize management training courses at preliminary, intermediate and advanced levels to improve manpower efficiency and to prepare men for higher positions.

Efforts to improve the administrative and managerial standard in general and to training administrators and managers at different levels and from various fields so far have failed to recognize the importance of basic scientific principles of sound management. It is therefore necessary to stress the importance of this in the minds of the population in general and managers in particular, by using appropriate measures to develop and promote the use of scientific methods in administration and management.

Efforts to develop administrative and managerial capability in Thailand had to be done extensively. This involves the upgrading of the quality of management in general and the improvement of the skills of each administrator and manager in particular. As such, foreign technical assistance will have to be obtained. This assistance will be most important during the first phase which aims at assessing the total requirements for this type of manpower in detail, at developing new curricula and at mobilizing other resources to be used in the development process.

To achieve the administrative and managerial development objectives, the Government will set up a committee to coordinate the efforts of various organizers of the training courses, and to ensure that the type of training that is provided is directly in line with market requirements. Apart from this, the committee will carry out studies and analyses to determine appropriate measures and policies for developing administrative and managerial skills and submit them periodically to the Government for consideration.

7. Manpower Development in Government Services and State Enterprises

7.1 Manpower Development in Government Services

7.1.1 Problems and Obstacles. The Government (excluding state enterprises) at present employs about 1.2 million people. Of this total, 628,000 are permanent officials or employees and 572,000 are temporary employees. The quality of the manpower employed by the Government is an essential component in the process of national development which has not received sufficient attention in the past. More interest has been given to the planning and preparation of development projects relating to other components that are considered important for promoting national prosperity. In future, more emphasis must be given to the development of government manpower, improvements in the administrative system and the provision of sufficient work incentives in order to raise the level of efficiency in government operations.

The main manpower problems in the public sector include the following.—

(1) Government administrative structure is outdated and must be adapted to meet the challenges brought about by changes in the economic, social and political situations.

(2) The Government's hierarchical structure and numerous official regulations are unnecessarily complicated and involve too many steps in the working process. This makes government operations inflexible and hampers government services to the general public.

(3) The imbalance between the number of staff and the volume of work, has resulted in too much workload for certain units and too many employees in some other units.

(4) The personnel administration system that is used by government agencies does not incorporate modern management principles. Hard-working and honest officials are not given enough support and encouragement while the uninterested non-productive officials do not receive sufficient punishment. In practice, the process of selecting officials for promotion is still based on the clique system and on seniority considerations rather than on capability and work results.

(5) Government salary scales are much lower than they should be, considering the big increases in the cost of living and when compared with the salary scales of employees in state enterprises and the private sector. During the Third Plan period the consumer price index increased at an average rate of 12 per cent per year. Taking these changing economic circumstances into account, salary and wage scales in the private sector and state enterprises were accordingly adjusted upwards a number of times. However, there have been in the meantime only a few marginal adjustments of government officials' salaries and each adjustment was far below the rate of increase in the cost of living. Most government officials and employees have been disheartened by the reduction in their real income. Quite a number of them have had to take up part-time jobs to supplement their income. Some have even turn to illegal means of increasing their incomes. Those who could not earn additional income had to resign from the civil service and take up jobs in the private sector. All these practices has disastrous repercussions throughout the civil services system and had the effect of depressing the already low level of efficiency. This became one of the major obstacles to the attainment of national development goals.

7.1.2 Policies and Measures

Efficiency improvement is to be the key objective in the manpower development scheme for the civil service. This should concern government officials and employees of all ranks and from every office. Factors that block the advancement in efficiency of government operations should be identified and urgently removed.

7.1.3 Policy Measures and Conditions

To achieve greater efficiency in the civil service, the Government should immediately deal with the problems identified and try to raise the morale of government officials and employees. Some of the more important measures that should be implemented include the following:-

(1) Increase salaries and security benefits of government officials and employees in accordance with the changes in the cost of living. At the same time the structure of government offices should be reformed so that offices with little or no work are closed down and their work transfered to other units. Duplication of effort should be eliminated and bureaucratic regulations should be simplified so that there are fewer procedures and requirements for those who have to deal with government agencies

Restructuring the Government machinery and regulations is an enormous task requiring in-depth studies by people with diversified skills. As such, a committee should immediately be set up to analyse the structural components of the civil service and to urgently recommend ways of improving the administrative structure of both the civil service and state enterprises.

(2) A recent survey of civil service positions by the Civil Service Commission which is used as a basis for allocating positions to various government agencies found that some government offices were overstaffed and had persons with qualifications not suited to the nature of the job that they have to do, while other offices were short of manpower. It is therefore necessary to transfer surplus manpower and those with qualification-job mismatch problems to understaffed offices or newly-established ones. Also, government agencies with workloads subject to a seasonal pattern should use a higher proportion of temporary employees.

For a more efficient allocation of manpower, ministries and departments must draw up long-term manpower plans in relation to the jobs within their responsibility. These plans should contain the details relating to vacant positions, the number of persons due for retirement and those returning from abroad. This information should be classified by positions, educational levels and subjects studied and should also include a future expansion plan that requires additional positions.

(3) The efficiency of a civil servant is directly related to his attributes. A person who does not have a sound technical background, who is not familiar with work procedures and has had limited experiences in applying his knowledge will probably not be all that productive. This type of person will have to be trained further and new techniques and work procedures will have to be taught. The following types of training are required:-

(a) Administrative Training. Some civil servants at the middle and more senior levels need further training in the field of management to supplement their educational background and to enable them to carry out their administrative functions more effectively. Administrative training courses that are to be organized for personnel at various levels should provide theoretical and practical knowledge on modern administrative techniques, adapted for use in the Thai environment and administrative culture. Civil Service Commission is to be responsible for the organization of these courses in cooperation with other government agencies and educational institutions.

For the training to be effective, the Civil Service Commission must lay down some requirements and conditions relating to the attributes of prospective administrators at each level. These basic attributes should include certain abilities necessary for carrying out functions related to each job as well as the completion of certain training courses at a particular level. For civil servants who are not fit for administrative positions will be given opportunities to advance in their present line of work. Regulations which hamper the advancement of these types of officials will be revised accordingly.

(b) Academic and Professional Training. It is necessary to keep up with the advancement in the academic and technological fields and where possible, adapt new techniques and systems for accelerating national development. As it is important for government officials involved in these fields to have the chance to upgrade and update their academic and technological knowledge, training courses in these fields should therefore be periodically organized by relevant agencies and educational institutions with the office of Civil Service Commission as the main coordinator.

(c) Training for Those in Administrative Units and Other Types of Training. The administrative unit of each organization plays a key role in the organization's day-to-day operations. Its supporting function enables academic and other work to be executed efficiently. It is therefore necessary to develop capable personnel for this kinds of work and for other duties that provide direct services to the public. This type of training can be organized by the Central Personnel Administration Division and certain educational institutions with the Civil Service Commission as the main coordinator.

(d) Training of Newly-Recruited Officials. At present most newly-recruited officials have not gone through any orientation course and must therefore get acquainted with rules and regulations connected with their work on their own. The office of the Civil Service Commission, legally responsible for the recruiting of government employees, will therefore provide orientation courses for new employees on various government regulations and on secretarial work such as the drafting of correspondence, the writing of memorandum, and minutes of meetings. These courses should enable new employees to immediately start working without their superiors having to spend too much time in advising them and correcting their work.

Furthermore, the Office of the Civil Service Commission ought to consider the upgrading of the minimum educational requirement of those who are involved in activities relating to taxation, registration and police work. These kinds of jobs involve direct contact with the general public, require sound decision-making and the ability to understand and explain laws and regulations to various persons.

(4) The salaries of government officials and other fringe benefits must be adjusted with changes in the cost of living. As a first step, their real income should be raised to the level that prevailed just before the salary scale adjustment in 1974. Then for the longer-term, a schedule should be worked out to periodically adjust civil servants' salaries based on the trend in the consumer price index series.

(5) Personnel administration must follow the present Civil Service Law in such matters as the rotation of civil servants to different positions within an agency, the merit-rating based on job performance and ability as well as the transfer civil servants to jobs most suited to their knowledge and capability. Civil servants should also be allowed to retire at various ages, whether at 55 or 60 years of age.

(6) Government efficiency is closely related to the size of their work unit and scope of responsibility. As an agency expands and takes on more responsibilities, problems relating to staff management and the supervision of operations multiply. The decentralization of power should thus be implemented to reinforce other measures to improve the efficiency of government units. Local administrative bodies should have more autonomy. In particular, they should be allowed to collect their own revenues and they should be responsible for maintaining law and order in their localities.

7.2 Manpower Development in State Enterprises

7.2.1. Problems and Obstacles

(1) Administrative problems:

The lack of a definite set of coherent government policies relating to state enterprises is largely responsible for the inefficiency in the operations of state enterprises. Administrative and supervisory work represent the weakest points in the operations of many state enterprises. The Government's intervention in the administrative affairs of various state enterprises, particularly at the higher levels sometimes goes too far. This paralyses the supervisory tasks and produces deteriorating effects on efficiency. These problems and obstacles thus have to be tackled along with the improvement and development of other aspects of state enterprises

(2) Labour problems. State enterprises determine their own salary scales, welfare benefits and other compensations that are more rewarding than civil service remunerations. However, they still fail under the Labour Act which unnecessarily drives up certain categories of personnel expenditures. Another problem is that some inequality in the status of various state enterprises led to frequent demands by the employees of the less well-endowed enterprises for equal rights which in turn has negative effects on the efficiency of those enterprises. It is crucially important to find measures to counter these problems.

7.2.2 Policies and Measures

Manpower development programmes in state enterprises should aim more at improving the ability and efficiency of their administrators. These state enterprises should aim at operating at the same level of efficiency as the private sector. It is therefore important that the incentives are adequate and comparable with those offered in the private sector. The following policies and measures should be adopted:

(1) Adequate incentives must be provided to raise the level of efficiency and as such, the salaries, wages and other benefits offered by state enterprises should be increased accordingly. Laws and regulations should be revised to do justice to both the Government and the employees. The appointment and transfer of high-ranking administrators should be made more flexible so that administrators with the required ability can be shifted to positions which optimise their contributions to society.

(2) Members of the Board of Directors of various state enterprises must be qualified persons and minimum requirements relating to individual attributes should be stipulated. These requirements should include work experience and practical knowledge in the particular field that the state enterprise operates. The scope of responsibility of the senior administrators and Board members of each state enterprise should be stipulated clearly.

(3) A committee should be set up with similar authority and functions as the Civil Service Commission, but for supervising the personnel of state enterprises. This committee should be authorized to lay down rules and regulations on personnel administration to determine manpower positions and duties and the salary scale of employees of every state enterprise.

CHAPTER VI

DEVELOPMENT AND NATIONAL SECURITY

1. National Security and National Prosperity

Internal and external political situations necessitate advanced planning for dealing with possible disturbances during the Fourth Plan period. National defence capability depends, among other things, on the economic power of the nation. As the nation must build up its own defence capabilities in order to promote self reliance, some cut-back in socio-economic development spending may be necessary. As there is a trade-off between defence spending and economic and social development expenditure, the interrelationship between the socio-economic and the defence sectors must be explored in more detail to work out a proper balance in spending between these two sectors. Particular emphasis will be put on finding areas of mutual benefit and more public resources will be channelled into these areas to simultaneously promote national security and national prosperity.

Besides the security problems on the national level, some special attention must be given to specific problem areas of the four main regions of the nation. These problem areas are characterized by insurgency problems and economic poverty.

In the past, these problem areas were neglected. In future, socio-economic development programmes must be implemented in conjunction with actions to check subversive activities. During the Third Plan, an insufficient number of social and economic development projects were prepared for these specific problem areas. Efforts to develop these problem areas were not very effective as an overall comprehensive plan for these areas did not exist and there was poor coordination among government agencies involved in development work in these areas.

2. Guidelines for Promoting Development and Strengthening National Security

2.1 The Allocation of Resources to Promote Development and Security

During the Third Plan, an insufficient amount of funds was allocated for developing these politically sensitive areas, despite the fact that the Plan aimed at alleviating security problems. Total development expenditure earmarked for development purposes in the Northeast region during the previous Plan averaged out at 1,519 baht per capita for this region. On the other hand, the allocation of development funds to the Central region excluding the Bangkok metropolitan area was equivalent to about 1,761 baht per capita in this region. Total development funds for the Central region including the budget allocated for projects and programmes in the Bangkok area amounted to 3,816 baht per capita.

In terms of expenditure per capita, the Northeast region received the smallest share of the development budget of the Third Plan even for agricultural and irrigation development. For the Northeast, funds for developing the agricultural sector amounted to only 238.4 baht per capita. The corresponding figure for the Central region (excluding Bangkok) during the Third Plan was 457.9 baht per capita. In the communication and transportation sector, the Northeast also had the smallest share of only 284.7 baht per capita. The corresponding figure for the Central region (excluding Bangkok) was 350.4 baht per capita. Finally, the Northeast received the lowest share of the Third Plan's total development budget for all economic sectors, or about 563.5 baht per capita. The corresponding figure for the Central region was 862.6 baht per capita. As for the Third Plan's social development budget, the Northeast received only 956 baht per capita whereas the Bangkok area received 3,213.2 baht per capita.

The statistics relating to the distribution of population in politically sensitive areas show a different pattern. On the other hand, only 9.4 per cent of the total population living in areas classified as insurgency areas throughout the country are to be found in the Central region. Bangkok does not have any area classified as an insurgency area. In sum, Third Plan development expenditures were not quite consistent with national security objectives.

2.2 Income Disparity and Insurgency Areas

The regions with the most serious insurgency problems tend to be the regions which are least developed. In 1975, the Northeast region had a per capita gross regional product of only 3,036 baht and the number of people living in areas classified as being insurgency areas is equivalent to 52.5 per cent of total number of people living in insurgency areas throughout the country. The Northern region, with a per capita gross regional product of 5,047 baht had about 18 per cent of the total number of people living in insurgency areas throughout the country. The Southern region, with a per capita gross regional product of 7,388 baht had just over 20 per cent of the total number of people living in insurgency areas throughout the country. Finally, the Central region, excluding Bangkok, with a per capita gross regional product of about 9,410 baht in 1975 only has about 9.4 per cent of the total number of people living in insurgency areas throughout the country.

The degree of development of infrastructural facilities also appears to be negatively correlated with the severity of security problems. Less than 5 per cent of the total cultivated area in the Northeast region is irrigable. The corresponding figure for Central region is about 47.6 per cent. In addition, only 62.6 per cent of the total area in the Northeast that is irrigable is irrigated. The corresponding figure for the Central region is 83.3 per cent. Besides the economic infrastructural projects, there are still disparities considerable differences in the strength of farmer organizations which are important for stimulating socio-economic development. In 1975/1976, only 10.2 per cent of all agricultural households in the Northeast are members to the two main farmer organizations: the agricultural cooperatives and the

farmer groups. The corresponding figure for the Central region is approximately 21.5 per cent. The low level of participation in farmer organizations in the Northeast region must be raised during the Fourth Plan period as these organizations can contribute significantly to the economic development of the country and help strengthen national security.

2.3 Administrative Problems. At present there are several agencies dealing with various aspects of rural development. There are fourteen agencies involved with different aspects of agricultural extension and promotion of agricultural occupations, sixteen agencies involved in the promotion of farmer organizations and thirty-one agencies responsible for various economic infrastructural projects in rural areas.

This multiplicity of agencies in the area of rural development unavoidably results in overlapping activities. For example, both the National Security Command and the Office for Accelerated Rural Development have nearly identical economic infrastructural projects covering the same areas. In future, it is necessary to improve coordination among these different agencies so that limited resources are used more effectively to develop the country.

3. Coordinating Development and Security Plans

Given the present political situation, social and economic development efforts must be geared to strengthen national security. To the extent possible, measures for promoting development and for improving the security situation will be synchronized.

3.1 Economic Preparedness. If during the course of the Fourth Plan the security situation in Thailand deteriorates drastically, an economic preparedness plan will be implemented to mobilize all necessary resources for national defence.

3.2 Stocks of Essential and Strategic Goods. such as fuels, medicine and basic foodstuff will be built up to strengthen national defence capabilities. At the same time, the economic burden of such a strategy will be limited as much as possible. As a first step, only measures that are considered to be absolutely necessary for national resilience will be implemented. As a general rule, the Government will give priority to projects and programmes which contribute simultaneously to development and security.

3.3 The Priority Listing of Security Supporting Projects

If absolutely necessary, the priorities assigned to different development projects in annual development plans will be re-adjusted so that higher priority is assigned to projects which contribute most to national security.

3.4 Economic and Social Development Plan and Armed Forces Development Plan.

Since economic resources are the underlying foundations of military strength, it is vitally important to coordinate the Economic and Social Development Plan with the Armed Forces Development Plan. A larger proportion of the public budget will probably have to be allocated for military purposes, in line with the Government's policy of attaining a greater degree of self-reliance through development of military capability.

3.5 The Utilization of the Military for National Development

Various measures will be designed to support the Government's policy of using the military for promoting national development such as the preparation of projects and programmes for teaching military personnel various skills which would be of use in various civil occupations. In addition, the National Economic and Social Development Board and other related agencies will cooperate with the military in formulating plans to utilize military forces for development purposes in close cooperation with civilian personnel.

4. Strategies to Solve Socio-Economic Problems in Development Zones for Strengthening National Security

To promote economic and social development in various development zones and thus strengthen national security, it is necessary to improve the efficiency of government operating agencies so that they can provide better public services to the people and ensure peace and security which are crucial for the prosperity of every community. Measures which should be taken include the following:-

4.1 In formulating programmes and projects for promoting economic and social development in insurgency areas, the real needs and requirements of the people living in these areas should be taken into explicit account. Particular care should be taken to ensure that the people in these politically sensitive areas cooperate and support the programmes and projects that have been designed to improve their living conditions. These efforts in the economic and social development sphere would then complement the operations of the agencies responsible for suppressing insurgency.

4.2 The existing bureaucratic machinery will have to be restructured to promote better coordination and more consolidation of resources. Better project implementation and increased administrative capabilities must be achieved so that public services and public safety can be extended to all areas. The people will then rely on and have more faith in the government.

4.3 Communities at the village and tambol (sub-district) level will be strengthened through economic, social and political development. The people in these communities will receive training to enable them to raise their own standards of living. In addition, the government will arouse an awareness in the people of these communities of their roles and responsibilities in helping to build up and to defend their community as well as their country to ensure prosperity and security for their children and grandchildren.

To achieve the above objectives, the following measures will be applied:-

4.3.1 A reassessment of the relative importance of economic and social development work in development zones for national security will be carried out.

To ensure that economic and social development efforts during the Fourth Plan period will be responsive to the national security objective, the

National Security Council, the National Economic and Social Development Board and other relevant agencies will cooperate in designing a set of national economic and social development policies to mobilize national resources towards solving national security problems in accordance with external and the internal economic, social and political conditions. To accomplish this objective, detailed studies will be carried out to identify problems in various security development zones. Security development plans will then be formulated to concentrate development efforts on insurgency areas or areas with potentially serious insurgency problems. Resource allocation would then be more responsive to national survival needs. Economic, political and social objectives would then be integrated.

4.3.2 The development approach that is most suitable for strengthening national security will be improved

The National Security Council and the National Economic and Social Development Board will cooperate in the formulation of strategies, in the selection of measures to use and in the evaluation of the development work directly related to national security. Also, these two agencies will cooperate in screening projects and in scrutinising budgets relating to these development efforts for strengthening national security during the Fourth Plan period. An interdisciplinary approach to evaluate and to analyse economic, social, political and psychological factors will be adopted. These measures should help solve the national security problems to a considerable degree.

Table 6.1
Population in Areas with 1965 Insurgency Problems by Regions

Regions	Total Population ^{1/} (persons)	Population in insurgency areas ^{2/} (persons)	Percentage of total population in insurgency areas (%)
Northeast	14,823,000	4,619,006	52.5
North	9,519,000	1,580,588	18.0
South	5,441,000	1,766,435	20.1
Central	10,664,000	829,084	9.4
Bangkok Metropolis	3,328,000	—	—
Total	43,775,000	8,795,113	100.0

^{1/} Source : Ministry of Interior

^{2/} Source : Economic Preparedness and Development for Security Division, NESDB

Table 6.2
Per Capita Expenditures in the Third National Economic and Social Development Plan by Sectors
and by Regions^{1/}
(Baht per capita)

	Agriculture and Irrigation	Industry and Mining	Communica- tion and Transportation	Energy Commerce and Services	Total Economic Sector	Social Activities	Town and Community	Public Health	Education	Total Social Sectors	Total Econo- mic and Social Sectors
Northeast	238.4	10.2	284.7	30.2	563.5	51.4	86.8	146.8	671.0	956.0	1,519.5
North	321.5	9.3	370.8	28.3	729.9	59.9	88.4	150.2	733.2	1,031.7	1,761.6
South	331.7	6.2	496.4	51.7	886.0	71.6	89.0	155.0	781.3	1,096.9	1,982.9
Central ^{2/}	457.9	5.5	350.4	48.6	862.4	43.4	86.4	140.8	628.1	898.7	1,761.1
Bangkok Metropolis	181.2	54.8	251.2	114.9	602.1	69.6	896.5	131.9	2,115.0	3,213.0	3,815.1

^{1/} Expenditures by regions and sectors from Monetary and Fiscal Section, NESDB
Population 1974 National Account Division, NESDB.

^{2/} Excluding the Bangkok Metropolis.

Table 6.3

1/
Per Capita Gross Regional Products by Areas
(Current Price)

	Per capita Gross Regional Product 1972 (baht)	Per Capita Gross Regional Product 1975 (baht)	Percentage Change
Northeast			
Whole region	1,867.8	3,035.6	62.5
Changwats with high insurgency problems	2,092.9	3,334.0	59.3
North			
Whole region	2,815.7	5,046.8	79.2
Changwats with high insurgency problems	2,492.1	4,494.3	80.3
South			
Whole region	4,477.3	7,388.1	65.0
Changwats with high insurgency problems	3,051.4	5,055.2	65.7
<u>2/</u> Central			
Whole region	5,673.0	9,409.7	65.9
Changwats with high insurgency problems	6,912.0	11,191.7	61.9

1/ Gross Regional products from National Account Division, NESDB.
Population figures from Ministry of Interior.

2/ Excluding the Bangkok Metropolis

Table 6.4
Irrigable and Irrigated Areas by Region 1975

Region	^{1/} Total Cultivated Areas	Total Irrigable Areas (Million Rais)	Percentage of Total Cultivated Areas (%)	Total Irrigated Areas (Million Rais)	Percentage of Total Irrigable Areas %
Northeast	47.8	2.4	5.0	1.5	62.5
South	11.5	1.7	14.8	0.9	52.9
North	24.0	3.6	15.0	2.4	66.7
Central	26.1	12.4	47.5	10.3	83.1

^{1/} Department of Agricultural Economics: 1975

Table 6.5
Membership in Peasant Groups and Agricultural Cooperatives
by Regions

	Members of the Organizations	<u>1/</u> Total Two Total Agricultural <u>2/</u> households	Percentage
Central	215,259	1,002,860	21.5
Northeast	216,467	2,117,943	10.2
North	166,619	1,274,459	13.1
South	64,927	664,738	9.8
All Regions	663,272	5,060,000	13.1

1/ Members of Agricultural Cooperatives, preliminary figures from Agricultural Cooperatives Division, Cooperative Promotion Department (excluding settlement cooperatives and fishery cooperatives)

Members of the Peasant Groups preliminary figures from Agricultural Extension Department

2/ Estimate

PART THREE

THE SPECIFIC ECONOMIC-SOCIO DEVELOPMENT STRATEGY

CHAPTER 1

DEVELOPMENT AND CONSERVATION OF CRITICAL ECONOMIC RESOURCES AND ENVIRONMENT

The Fourth Plan has accorded high priority to problems concerning the utilization of national critical economic resources, especially land, forests, water, minerals, energy and fuels, as well as problems relating to environmental deterioration which have resulted from previous neglect. These factors are essential not only to the future development of the nation economically and socially, but are vital to national security. Therefore, basic studies have been carried out to determine the underlying nature of these problems in order to formulate an appropriate development strategy for these major resources in line with other important targets relating to socio-economic structural changes, the distribution of income, population growth and the preservation of national environmental balance.

1. Land

1.1 Land-Use Situation

Rapid economic expansion and population growth in the past have brought about tremendous changes in the national land-use pattern. In 1973, approximately 109 million rai of land was used for agricultural purposes which is equivalent to or about 34 per cent of the total land area of 321 million rai. Forest areas accounted for 119 million rai or about 37 per cent of the total land area. The remaining 93 million rai or about 29 per cent of the total land area consisted of swamps, marshland, uninhabited areas, scrubland, dwelling areas and other areas.

Total irrigable area accounts for about 20 million rai or about 18.3 per cent of the total agricultural area of 109 million rai. Approximately 12 million rai or 60 per cent of the total irrigable area in Thailand is located in the Central Region. In terms of the size of irrigable area, the Central Region is followed by the North, the Northeast and the South in that order. Most of these irrigable areas are used for paddy cultivation and only about 2 per cent of the total irrigable area is irrigated and has sufficient water for dry season cultivation. Non-irrigable agricultural land, which accounts for 82 per cent of total agricultural land is used mainly for paddy cultivation and for growing all kinds of upland crops, perennial plants and fruit trees as well as for livestock rearing.

In Thailand, land is the most important factor of production in the agricultural production process. Thus, the improvement of the living standards of farmers who constitute the majority of the population will require, as a first step, measures for improving administrative efficiency for bringing about a better allocation of land resources. Land problems stem from many significant factors, including the following:-

1.1.1 Pressures of Population Growth The high rate of population growth increase the size of agricultural households which in turn increases the demand for land for agricultural purposes. In addition, the partition of land to offsprings reduces the size of individual holdings. This practice is most prevalent in the upper parts of the Northern region. The estimated number of agricultural households with owners over 20 years old are as follows :—

Table 1.1
Number of Agricultural Households with Farmers over 20 Years Old

Year	Agricultural Households (thousands)	Increase (thousands)
1960	3,698	—
1970	4,375	677
1975	5,060	685
1980	6,776	1,716

During 1975–1985, the number of agricultural households are expected to increase by about 1.7 million. If new land is to be allocated to these households at 20 rai per household, an additional 34 million rai of new agricultural land would be required within a decade. This, however, exceeds the total amount of new land that can be used for cultivation purposes.

1.1.2 The Changes in the Type of Farming The change from subsistence to commercialized agriculture has created some additional problems. Previously, farmers produced food to meet their basic needs, but with commercial farming, in some instances, income earned from selling certain crops are not sufficient for purchasing certain other items that used to be produced when each household was a self-sufficient production-consumption unit. This phenomena accompanying the change over to more commercialised types of farming to a considerable extent explains the increases in farmer indebtedness. Fluctuations in prices of various agricultural commodities and changes in climatic conditions also contribute to increasing farmer indebtedness.

1.1.3 The Deterioration in Soil Fertility The rapid increase in the total area classified as 'agricultural land' has been achieved through the extension of cultivation into areas not particularly suitable for agriculture. A report by the Royal Forestry

Department revealed that in the Northeast, 126,149 farmers have encroached into forest areas covering approximately 5.3 million rai of low productivity soil in the provinces of Mahasarakham, Roi Et, Udon Thani, Loei, Ubon Ratchathani, Surin, Nakhon Ratchasima, Chaiyaphum, Buriram, and Khon Kaen. In addition, 5.2 million rai in the lower part of the Central Region faces acid sulphate soil problems, especially in the provinces of Bangkok, Nonthaburi, Pathum Thani, Samut Prakan, Samut Sakhon, parts of Suphan Buri, Nakhon Pathom, Kanchanaburi, Ratchaburi, Samut Songkhram, Ayutthaya, Saraburi, Nakhon Nayok, Prachin Buri, Chachoengsao, and Chon Buri. Acid sulphate soil areas are most prevalent in the Rangsit Plain which covers an area of 1.3 million rai, Sena with 0.9 million rai, Chachoengsao with 0.9 million rai, and Ayutthaya with 0.48 million rai. These areas are characterised by low productivity. Paddy production in these areas average 8–15 tang per rai, compared with the Central Region average of 40 tang per rai. Thus, the problem of acid sulphate soil contributes to worsening farmer indebtedness and, in time, the transfer of land ownership from farmers to money-lenders. The study commissioned by the Food and Agricultural Organization entitled "A Study on the Demand for Wood and other related Resources in Thailand, 1970–1990" which was submitted to the Royal Thai Government on 1972, revealed that as much as 33.3 million rai of low fertility land was being used to grow paddy. Of this total, 23 million rai or about 70 per cent of the total low fertility land is located in the Northeast region.

1.2 Problems Relating to Arable Land

The land-use conditions mentioned earlier have caused a number of specific problems relating to agricultural land use. Some of these problems are listed below.

1.2.1 The Size of Farm Holdings Has Diminished Over Time, from about 16 rai per household in 1963 to about 14.7 rai in 1975 and it is estimated that the average size of farm holdings in 1985 will be 11.6 rai per household. A survey on agricultural land tenure revealed that there are twenty-five provinces with an average farm holding of less than 14.7 rai per family. These twenty-five provinces can be classified into various groups. In Chiang Rai, Chiang Mai, and Mae Hong Son, 83.5 per cent of the total number of households have farm holdings smaller than 14.7 rai. In Nan, Lampang, Phrae, Sukhothai and Uttaradit, 64.8 per cent of all households operate farms smaller than the national average. The corresponding figure for Samut Prakan, Samut Sakhon, and Samut Songkhram is 60.4 per cent. In Chainat, Singburi, Nonthaburi, Ang Thong, Suphanburi, Ayutthaya, Nakhon Pathom, Pathum Thani, Nakhon Nayok, and Thonburi 38.1 per cent of all households operate farms smaller than the national average in 1975. The corresponding figure for Kanchanaburi, Ratchaburi, Petchaburi, and Prachuap Khiri Khan is 36.8 per cent.

1.2.2 An Increasing Number of Landless Farmers According to the Farmers' Assistance Committee, approximately 77,000 farmers have asked the Government to provide them land for cultivation. More than 50 per cent of these applicants live in the Central Region. These figures are preliminary and refer to the period up to March 1976

1.2.3 The Increase in the Number of Target Farmers. The problem of land tenure stems from the high rate of population growth and the deterioration in soil fertility. In the Central Region, approximately 200,000 households rent land for farming. This is equivalent to about 40.7 per cent of the total number of agricultural households in the region. In the Northern Region, about 100,000 households rent land for farming. This is equivalent to about 18.3 per cent of the total number of agricultural households in the region. In the Southern Region, about 50,000 farm families rent land for farming. This is equivalent to about 15.7 per cent of the total number of households in the region. The Northeast Region has the lowest tenant farmers to total farmers ratio; but 30,000 farm families still have to rent land for cultivation. In addition, farmers in this region suffer from the disadvantages of poor quality soils for farming and insufficient water for cultivation. As a result, the lowest averages for productivity and farmer income earnings have been recorded in the Northeast Region.

A survey on land tenure problems between 1973–1974, carried out by the Ministry of Agriculture and Agricultural Cooperatives revealed that the provinces that have the most severe land tenure problems are Pathum Thani, Samut Prakan, Ayutthaya, Nakhon Nayok, Nonthaburi, Chachoengsao, and Thonburi where 41–74 per cent of all farm families have to rent land for farming. In addition, in the provinces of Nakhon Pathom, Chiang Mai, Ang Thong, Saraburi, Singburi, Suphanburi, and Choburi 27–36 per cent of all farm families belong to the tenant farmer class. In another 13 provinces, land tenure problems are getting significantly more serious. These provinces are Lopburi, Phichit, Mae Hong Son, Nakhon Sawan, Samut Sakhon, Phetchaburi, Samut Songkhram, Lamphun, Phrae, Prachinburi, Pitsanulok, Uthai Thani, and Kanchanaburi where 14–26 per cent of all farm families belong to the tenant farmer class.

1.2.4 Intensified Encroachment into and Deforestation of Forest Areas.

A land-ownership survey of 202 forest reserves covering 28.8 million rai revealed that people have illegally occupied about 2.2 million rai of forest land. This is equivalent to about 7.5 per cent of the forest area covered in the survey. Most of these illegal settlements in forest areas are to be found in the Northeast. Other regions, listed in order of the seriousness of this problem are the North, the Central and finally, the South.

The air-photo survey in 1971 showed that forest areas accounted for about 57 per cent of the total land area. However, the satellite census in 1974 showed that forest areas covered only 37 per cent of the total land area. This indicates that deforestation during this 13 year period amounted to approximately 63 million rai or about 20 per cent of the total forest area.

1.2.5 The Increasing Number of Conflicts Relating to Arable Land.

Conflicts relating to land ownership, land tenure and debt payments have become more serious over time and land ownership has gradually been transferred from farmers to money-lenders. However, farmers have only started appealing for assistance from the Government in this matter early in 1971. Up to March 31, 1976 the Govern-

ment received 30,391 petitions and successfully mediated a total of 12,061 land disputes covering an area of 446,618 rai in forty-seven provinces. These disputes were settled by getting farmers and money-lenders to mutually agree to terms relating to the repurchasing or redemption of land title certificates and/or renting agricultural land.

1.3 The Measures That Are Being Applied by the Government at Present

In the past, the Government used various policies to solve the land tenure problem, but past operations have been somewhat limited in scope as shown in the following table:—

Table 1.2

Measures That Are Being Applied to Solved Land Problems

Problems	Projects	Government Agencies	Areas covered up to 1975 (million rai)	Target 1976-1981 (million rai)
1. The lack of security in land ownership.	The issuance of land title certificates on a nation-wide basis	Land Department	11.7	67
2. Lack of agricultural land	A. Land allocation without occupational promotion services. Land allocation scheme for large and small holdings.	Land Department	1.5	3.4
	B. Land allocation with occupational promotion services. Self-help Settlement	Public Welfare Department.	2.0	0.7
	Settlement Cooperatives.	Co-operatives Promotion Dept.	0.5	3.5
	Land Development Department ^{1/}	Land Development Department	0.08	0.1
	C. Occupational Promotion. Land consolidation	Land Consolidation Office	0.06	1.4
3. Forest destruction	Forest settlement	Royal Forestry Department	-	25.7
4. Redemption and repurchasing of land	long term credit	Bank for Agriculture and Agricultural Cooperatives	0.2	-
5. Agricultural Land Tenure	Land reform ^{2/}	Agricultural Land Reform Office	0.3	10.2

^{1/} Including land consolidation and land development projects only^{2/} Work accomplished up to 1976 and targets for 1977-1981

1.4 Operational Problems and obstacles Encountered by the Government

1.4.1 The Lack of Policies and Long Term Planning. Though the Government has implemented measures and projects to alleviate land problems in several areas as listed above, with so much backlog and rapid changes in situations these efforts have not been enough. The main obstacle in this field is the absence of an overall set of policies concerning such issues as forest conservation, preservation of soil fertility, tenant farmers, land title certificates and land consolidation. As an overall set of consistent policies did not exist it was difficult to improve the coordination of the numerous agencies working in this field. Some overlapping of functions occurred among the different agencies and operations in different areas were not properly coordinated. As a result, some groups of people received more privileges and assistance than others.

1.4.2 Problems Relating to Land Consolidation Projects. The problems in this area can be summarized as follows:—

(1) A system for selecting tenant farmers who should be given immediate assistance and for assigning priority to different areas based on the seriousness of the problem at present does not exist. As such, government assistance to farmers in this matter is not being effectively directed.

(2) Delays in government operations allow problems to intensify. Some times, people illegally occupy areas designated for land consolidation schemes prior to project implementation which then complicates matters.

1.4.3 Problems Concerning the Formulation of a Land Use Plan. Clear-cut agricultural land-use plans have been prepared for areas in a number of irrigation projects and for certain types of government land consolidation schemes. In addition, the whole kingdom has been divided into nineteen "agricultural economic zones" and separate land use strategies were recommended for each zone. However, measures and projects to support these strategies were not formulated. Moreover, land in the lower reaches of upland areas, in forest areas, in swamp areas, in acid sulphate and saline soil areas and in the central plains of South Thailand (Pra Saeng or Panom Plain) still have to be surveyed. Lack of technical data here inhibits land-use planning for these areas.

1.4.4 Coordination Problems. The projects to issue land title certificates on a nationwide basis is a case in point. This project has been expanded to cover an area of 76 million rai within 10 years. However, this project has not been formulated in conjunction with land consolidation and land reform schemes. The problem is that each agency formulates its own projects according to its own legal framework and its given responsibility. Also, each agency proceeds along its own project cycle, given certain constraints, and it is very difficult to synchronise the timing of implementation of projects of different agencies. What is lacking is a central agency for coordinating activities in this field.

1.5 Strategies and Measures for Solving These Problems.

To solve the problems concerning cultivated land and household areas in the long term perspective, the Government will undertake the following measures:—

1.5.1 Overall Targets will have to be set for coordinating various land consolidation projects submitted by government agencies for inclusion in the Fourth Plan (1977–1981). These targets are necessary for getting related agencies to move in the same direction and for concentrating efforts to solve the existing problems. To this end, the following targets and guidelines have been set:—

(1) Measures will be implemented to alleviate land ownership problems in areas where at least 40 per cent of the farmers have to rent land. Land ownership will be transferred to farmers to the maximum extent possible.

(2) The Government will try to meet the needs of landless farmers and those operating farms which are too small for earning sufficient income. Priority will be given to those who have already filed appeals for assistance in this matter.

(3) Emphasis will be put on land consolidation schemes to preserve natural resources or to raise productivity.

(4) The Government's on-going development projects will be accelerated.

(5) New projects must help to solve problems relating to land tenure, landless farmers, the conservation of natural resources and productivity increases.

(6) In allocating land to farmers, the size of each holding must be consistent with the types of crops that are to be cultivated.

1.5.2 Measures to Alleviate Problems Relating to Land Tenure and Land Consolidation

(1) The Farm Rent Control Act of 1974 will be strictly enforced and one single agency will be directly responsible for this enforcement.

(2) High priority and support will be given to land consolidation projects and land reform schemes which will be located in areas where land problems are most severe.

(3) The selection of individuals eligible to be included in the land allocation scheme will be done more systematically by establishing definite criteria relating to the size of farm holdings for various agricultural sectors or by crop type. Only farmers with holdings smaller than the set criteria will be eligible for inclusion in the land allocation scheme. In addition, the relevant agencies will improve their investigation systems to screen the qualifications of the applicants thoroughly.

(4) All land consolidation projects of the Government will be included in the national land reform framework so that all ideas and measures in this field will be in the same perspective.

1.5.3 Urgency of Formulating a National Land Use Policy

Existing data will be utilized to draw up appropriate land-use plan in accordance with the socio-politico-economic situation and natural environment. At the same time, the Land Development Department's survey to collect additional data will be accelerated so that survey results can be used in the formulation of a detailed land-use plan during the Fourth Plan period. Land-use plans for the North and Northeast Regions will be formulated first and measures to supplement the implementation of these regional land-use plans in accordance with national land-use policies will be applied through the enactment of a national land-use law.

1.5.4 Accelerating Work on the Preparation of Land Use Projects in Problem Areas

The Kula-Rong-Hai Plain in the Northeast Region and the Prasaeng-Panom Plain in Southern Thailand are two problem areas where there is a heavy inflow of migrants. This in-migration takes the form of scattered and unordered settlements which in the longer-run will have adverse effects not only on the economic and social development of the area in future, but also on the environment. Thus the Government will have to increase efforts in the formulation and preparation of appropriate land development projects for these problem areas in particular. Other problem areas that will receive more government attention include the acid sulphate and saline soil areas of the Northeast Region, the coastal areas and along the lower parts of highland areas.

1.5.5 Measures Concerning the Ownership of Cultivated Land

(1) To give adequate assurance to land owners in areas outside forest reserves, the Government will issue land title certificates (Naw Saw 3) on a nationwide basis. This scheme, which has been prepared by the Land Department is scheduled to be completed in 1981.

(2) The land ownership system must be revised and made more realistic. The Government must review all areas currently classified as forest reserves with respect to basic realities. Certain parts of areas currently classified as forest reserves are no longer forest areas, but consist of illegal settlements. Public encroachment has resulted in the cutting down of trees and the use of land for agricultural purposes. Some of these areas are quite densely populated. The Government must decide whether it is realistic to continue to call these areas 'forest reserves'. If the Government decides that it is not worthwhile to put efforts into rehabilitating such areas so that they are turned into forest land again, the reserve status of these areas should be withdrawn and land title certificates should be issued to the settlers instead. Certain rules and regulations, of course, must be laid down for this procedure. The Royal Forestry Department should lay down the rules and regulations for forest reserves, but, for other types of reserves, the relevant agencies should be responsible.

1.5.6 Measures for Eradicating Farmers' Indebtedness

(1) As the problem of farmer indebtedness worsens, the extent to which land ownership is transferred from farmers to money-lenders increases. This crucial problem has to be solved by the provision of short and long term agricultural credit right down to the **tambol** level to effectively alleviate the burden of interest repayment that farmers must bear. In order to carry out this policy, the Government will assist the Bank for Agriculture and Agricultural Cooperatives in its attempt to raise funds from domestic and foreign sources to supply sufficient agricultural credit to farmers by allocating annual budgets to subsidize the interest charged on loans by the Bank for Agriculture and Agricultural Cooperatives.

(2) A five-year plan incorporating special projects will be formulated to redeem land for farmers on a nationwide basis. In this respect, some organization such as a Land Bank may have to be set up to be responsible for the implementation of this policy. During the first stage, the redemption of land will be carried out in areas where land deeds or land title certificates are already available. The Land Department will have to carry out surveys within the shortest possible time to determine the number of land holdings that should be redeemed. As for areas where land title certificates are to be issued, the Land Department will carry out a survey on land ownership concurrently with the issuance of land title certificates to facilitate subsequent formulation of a land redemption plan.

1.5.7 Measures for Resource Conservation and for Increasing Productivity

(1) Land consolidation schemes during the early stages will be launched in areas where most of the farmers are landowners and where the size of each farm is near the national average. This should help land consolidation schemes to proceed rapidly during the first phase.

(2) The Land Department's projects concerning the conservation of soil and water resources including the improvement of soil quality especially in areas of acid sulphate soil will be fully supported and high priority will be given to these efforts in areas designated for land consolidation and land reform schemes. However, not all areas with acute acid sulphate soil problems will be developed for agricultural purposes. If parts of these areas can be used for other ways, such as for industrial or residential purposes, then land consolidation, reform and other efforts to promote efficiency in agricultural production will be directed elsewhere. In addition, projects for soil and water resource conservation will be designed for other areas, whether these areas are used for agricultural production or for other purposes. Special effort will be made to maintain both soil fertility and watershed areas.

(3) Forest Village projects will be launched particularly in watershed areas where the encroachment problem is most serious.

(4) Reforestation projects to protect watershed areas will be given top priority.

(5) Occupational promotion programmes carried out in land allocation areas by Public Welfare Department, Co-operatives Promotion Department and Land Development Department, will be made more effective through improvements on the project implementation side. The relevant agencies will have priority in the allocation of additional personnel and budget.

1.5.8 The Improvement of Coordination among Agencies

(1) All agencies concerned with land allocation schemes will be put under a newly created office headed by a Minister.

(2) The legal advisers of the Government will be assigned to study existing laws, orders and various government agencies concerned with land allocation projects with the objective of creating an interrelated system with better coordination and supervision.

(3) A central administrative agency for allocating agricultural land to farmers will be established. This office will also be responsible for screening projects and budgets relating to land allocation in accordance with the five-year land allocation plan (1977-1981). Projects concerning land allocation or land improvement submitted for annual budget appropriations will have to be in line with the long-term land allocation plan in order to alleviate the long-standing land problem effectively.

2. Forestry

2.1 An Overview of Forestry Conditions

A survey of forest areas in Thailand in 1961 revealed that 57 per cent of the total land area of the country or 182 million rai was covered by forest. However, the satellite-photo survey in 1974 showed that forest areas in Thailand amounted to only 119 million rai, or about 37 per cent of the country's total land area. Thus, during these 13 years, deforestation amounted to about 63 million rai, or on average, 4.8 million rai per year. Most of the devastated forest areas are located in the following regions: the Northeast, the North, the upper part of the Central, and the West. Much of the deforestation is the result of shifting cultivation whereby people clear forest areas to grow maize, upland rice, tapioca, beans and upland crops.

The process of deforestation usually begins with the illegal felling of trees for commercial purposes and the semi-cleared forest area is then encroached on by people cutting down smaller trees to gather wood for charcoal. Finally, the area is denuded for cultivation purposes.

During the Third Plan period, the Royal Forestry Department replanted trees at an annual rate of 40,000 rai. In addition, the Forest Industry Organization replanted trees at an annual rate of 10,000 rai. However, the average rate of deforestation is 4.8 million rai per year. It is clearly evident that replanting work is very slow and can not catch up with the present rate of deforestation.

Accompanying the high deforestation rate is the rapid increase in cultivated area. In 1960, total cultivated area amounted to 49 million rai. In 1975, total cultivated area amounted to 109 million rai. This implies an annual rate of expansion of cultivated area of 4 million rai or about 6 per cent per year.

2.2 Forestry Problems

There are three underlying factors contributing to the rapid depletion of forest areas which threatens the conservation of natural resources for national development.

2.2.1 In granting forestry concessions in various forest reserves, not enough consideration has been given to the necessity of conserving forestry resources. Too much emphasis has been put on increasing the size of concession areas to meet the growing demand of an increasing number of concessionaires.

In addition, the supervision of activities in concession areas is still inefficient both in terms of the control on the number of trees allowed to be logged and on the replanting of trees as agreed in the concession. The transfer of forest replanting from the concessionaires to the Forest Industry Organization has not improved this situation to any appreciable degree.

Rapid deforestation is the result mainly of clandestine logging carried out by the concessionaires in adjacent forest area, using the concessionary forest area as a front for illegal logging operations in reserve forest areas.

2.2.2 The deforestation was also caused by the encroachment into reserve forest areas by landless farmers, farmers who could not earn a living on poor soils and various hill tribes. These people not only acquired new land by illegally occupying forest areas, but also received payment from timber merchants for cutting down trees.

2.2.3 The rapid rate of deforestation is also a result of heavy investment on economic infrastructural facilities and not enough investment in projects designed to conserve national resources. The construction of highways, dams and water storage facilities and the establishment of self-help settlements have facilitated the process of deforestation.

2.3 Targets in Forestry Resources Conservation

Forest lands are an important national asset. As such, the rapid deforestation rate must be checked. In the Fourth Plan, targets for conserving forest resources have been set up. The more important targets include the following:—

2.3.1 At least 37 per cent of the total land area must be covered by forest.

2.3.2 The present rate of deforestation at 4.8 million rai per year will be reduced to a rate not exceeding 0.5 million rai per annum.

2.3.3 The rate of reforestation will be accelerated to reach the target of 0.5 million rai annually and new techniques in forest replantation will be adopted to reduce the cost of reforestation.

2.3.4 Forest protection work will be expanded by increasing the wild life conservation areas from twelve to twenty-two zones and by increasing the number of national reserves from thirteen to twenty during the Fourth Plan period.

2.3.5 Reforestation programmes will be implemented in all significant watershed areas in the country, with priority given to watershed areas in the North and Northeast Regions.

2.4 Development Strategies and Measures

To achieve the above objectives, a number of development strategies for the conservation of forest areas have been formulated for implementation during the Fourth Plan period:—

2.4.1 Virgin Forests

(1) Policies, regulations, procedures and criteria in granting forest concessions will be reviewed in 1977 with the objective of reducing the number of forest concessions. In particular, the number of concessions located in forest reserve areas will be reduced so as to make it more difficult to use forest concession areas as a front for illegal felling of trees in forest reserves. Concessions will be granted mainly for areas where most of the trees in that area have reached the stage when they can be cut for commercial purposes.

(2) Surveys relating to present conditions and extent of forest reserve areas, watershed forest areas, wild life conservation zones and national reserves will be carried out, starting with the most problematic areas.

(3) Reforestation work will be contracted out to private enterprises on a project by project or area by area basis instead of putting all the responsibility for forestry replanting on the Forest Industry Organization. The Government will concentrate more on the provision of sufficient tree seedlings to reduce the cost of reforestation. The new reforestation drive will concentrate on new forest areas and devastated forest areas that the Government considers should be kept as forest land.

(4) Any forest area designated as forest reserve, wild life conservation zone or national reserve will be provided with a sufficient number of Government officials to protect the area against any encroachment.

2.4.2 Intruded Forests

(1) The survey on intruded forests will be accelerated to determine which areas should be kept on forest reserves and which areas should have the status of forest reserve withdrawn so that appropriate measures, whether reforestation or the issuance of land title certificates can be taken. Manpower and funds will be provided to accelerate a special survey project that is to be carried out jointly by three agencies comprising of the Land Department, the Land Development Department and the Royal Forestry Department.

(2) Land title certificates will be issued as soon as possible to people living in intruded forest areas that the Government decides to legally open for cultivation.

(3) Conservation and reforestation programmes and projects will be formulated especially for the more denuded watershed areas. High priority will be given to projects located in the North and Northeast Regions. These programmes and projects will mainly be accelerated reforestation schemes. Surveys will be carried out for designing package programmes and foreign financing will be requested for these projects.

2.4.3 Forestry Products

(1) Zones for transporting logs and wood must be delineated clearly, but regulations relating to transportation will be set in accordance with the concessions. At the same time, forest protection units must be strengthened.

(2) Limitations on approval for applications for new saw mills or the expansion of existing ones will be set so that existing capacity is consistent with the estimated supply of logs from forest concessions.

(3) The export of all kinds of logs and related wood products will be prohibited and these restrictions will be strictly enforced.

3. Water Resources

3.1 Problems Relating to Water Resources Development

Water is a vital resource in national development and the demand for water has increased with increases in the level of social and economic development. As water resources are limited, it is necessary to formulate strategies and measures to develop and to allocate water resources for facilitating future national development efforts.

To develop national water resources, it is necessary first to formulate overall policies and measures to control the use of and to conserve water resources. Numerous problems are associated with the development of water resources and the more important problems are summarized in the following paragraphs.

3.1.1 The Absence of an Overall Plan and Policies Relating to Water Resources Allocation

During the Third Plan period no definite overall policy concerning the utilization, development and maintenance of water resources at a national level was formulated. Water resources development projects are implemented by various agencies. As each agency has its own policy on the allocation of water supplies and the development of water resources within its own legal framework, certain problems arose. The main problems relate to the coordination, the separation of duties and responsibilities and the allocation of water to various development projects in different sectors.

3.1.2 Need for a Water Resources Survey

The formulation of a water resource development plan requires considerable data and information on the existing amount and exact location of water supplies as well as the present and future demand for water in each individual sector. Water resource surveys thus have to be carried out to obtain the necessary information for planning purposes. For a more efficient use of water resources, it is necessary to establish a system based on considerations relating to trade-offs between different uses of water resources as well as joint usage and other sectoral interrelationships.

3.1.3 The Absence of a Long Term Strategy for Alleviating the Problem of Aridity in the Northeast Region

Each year, the people in the Northeast region of Thailand have to face varying degrees of hardship depending on the severity of droughts and variations in the timing and amount of rainfall which damage crops. Government measures to alleviate such hardships tend to be short-run 'emergency type' measures. As yet, no long-term measures and strategies have been formulated for alleviating the problems arising from variations in water availability for cultivation in the Northeast region.

3.1.4 Water Pollution.

Problems of water pollution have become more acute, especially in more densely populated areas and in the vicinity of factories. Economic expansion and an increasing number of water users have aggravated problems concerning surface water and groundwater resources. Excessive use of water in some areas can cause natural imbalance such as problems of groundwater resources in the Bangkok metropolitan area where intensive use of ground water has resulted in the intrusion of sea water which adversely affects groundwater supplies. In addition, garbage or waste disposal from certain industrial plants contribute significantly to the pollution of rivers and canals. If drastic action is not taken, water pollution problems will worsen. Watershed areas are constantly being eroded while demand for water is increasing. What is required is a water resource maintenance plan.

3.1.5 The Absence of Measures to Regulate the Growth of Urban Areas and Industry in Accordance with Water Resources Development

At present, no measures have been applied to limit urban and industrial expansion in each location in accordance with the availability of water resources in such a way as to alleviate the future water scarcity problem.

3.1.6 Wasteful Utilization of Water. While some people have ample water and use it unsparingly, a large number of rural inhabitants are suffering from acute water shortage. This injustice should be rectified as soon as possible.

3.2 Overall Water Resources Situation and Relevant Development Strategies.

Water resources can be classified into 3 different categories as follows:—

3.2.1 Rain Water This is the most important category, as it is the origin of both surface and ground water. Thailand lies within the tropical zone and is under the influence of the Northeast and the Southwest monsoons almost all year round. According to the statistics of the Meteorological Department, Thailand has an annual rainfall average of 1,837 millimetres and the regional breakdown is as follows:—

Region	Average Rainfall Per Year (in millimetres)
North	1,260
Central	1,375
West	1,675
Northeast	1,370
East	2,480
South	2,860

As rain water is the most important water resource due to its abundant supply, the Government will promote more studies in this field and efforts to collect additional data relating to weather conditions through the setting up of meteorological stations in all provinces so that a more comprehensive and detailed set of data on a nationwide basis will be available for future water resource planning.

For arid areas, it is possible to transform humidity, clouds and fog in these areas into rain through the Artificial Rain project, that has been initiated by His Majesty. This project will be reassessed and expanded to cover as large an area as possible, subject to cost-benefit considerations.

3.2.2 Surface Water can be found in basins, ditches, canals, swamps and ponds that are scattered in various regions in the country and serve as a natural storage of rainwater. The basins in Thailand classified by regions are as follows:—

Region	Number of Basins
North	11
Central	5
West	7
Northeast	22
East	7
South	7

Surface water is useful for agricultural, industrial, transportation and health purposes. More specifically, it is used as a source of energy, for electricity generation and for human consumption. Surface water areas are also fishing areas. However, proper control of surface water to prevent floods and subsequent damages has still to be developed.

The largest and most important basin in the country is the Chao Phraya Basin which covers about one-third of the national land area and has an average annual runoff of approximately 25,000 million cubic metres. The Chao Phraya river rises in the North and flows southwards through the Central plain into the Gulf of Thailand. At present, the Central and the Northern regions both use the water resources of this basin. It has been estimated that the Central region uses about 16,000 million cubic metres while the Northern region uses approximately 9,000 million cubic metres. As the trend of water consumption is increasing, the allocation of water to various regions is becoming a more important issue. Interregional conflicts of interests relating to water usage is directly related to the interregional income distribution problem. Thus the screening of projects concerning the use of water resources in various regions must also take this into explicit account. Not only screening, but the construction of such projects must be consistent with overall objectives and different interests must be served to the greatest extent possible.

The Northern Region, with two-thirds of its total land area in the Chao Phraya Basin should be allowed to use more water from this catchment area. As the average size of agricultural holdings per family in the Northern Region is decreasing, water supplies, as an important production input, should be increased to raise land productivity sufficiently to compensate for the adverse effects of diminishing farm size. However, most of the water that is used in the Central Region has its origins in the Northern Region. There is a clear trade-off situation here. A possible solution is to divert water from the Salawin and the Mekong Basin areas into the Northern Region rather than reallocate water supplies from the Central to the Northern Region. This alternative is attractive in that adverse economic and social effects in the Central Region due to the reallocation and reduction in water supplies will be minimised. However, further study of the Salawin-Mekong diversion proposal is required. Another line of approach is to study in more detail the present system of salinity control in the Bangkok area. It may be possible to reduce the amount of water from the Chao Phraya river that is currently being used for this salinity control from its present level of 4,000-5,000 cubic metres per year. If so, it would be possible to reallocate water from the Central to the Northern Region without too much economic cost to the Central Region. In addition, attempts should be made to utilise groundwater supplies in the Northern Region to a greater extent.

In the Northeast Region, acute water shortages occur in the dry season in spite of its relatively high average rainfall and numerous tributaries. This is mainly because soil conditions are not so suitable for retaining water and the existing basins are small. In addition, the destruction of forest areas as a result of the practice of shifting cultivation has also aggravated the water shortage problem. Thus, water storage projects have to be implemented on a regionwide basis and more water from the Mekong River must be pumped and channelled into irrigation canals and various ditches and dikes. These projects can be implemented in a relatively short period of time and can give a psychological boost to inhabitants of the Northeast region and thus strengthen national security.

In sum, the study and the development of surface water resources especially with respect to basin development should be carried out systematically. Interrelationships should be taken into consideration concurrently with the formulation of steps and classification of priorities of various social and economic development projects. In addition, laws concerning water usage, water development and the conservation of surface water resources must be enacted to reinforce the other recommended measures.

3.2.3 Ground Water. The availability of ground water varies from area to area, depending particularly on the porosity and structure of soil layers. The utilization of groundwater, however, is still limited mainly to government agencies which supply water to various municipal areas.

The drilling of wells for ground water in the past has been done without adequate technical information on the availability of groundwater supplies and so results of these operations have not been as satisfactory as they could be. In future, more pre-feasibility studies using techniques in the field of geology, geophysics, hydrology, etc. will be carried out in conjunction with survey drillings to estimate the availability of ground water supplies in various areas. This should lead to a higher level of efficiency in ground water drillings and help to limit the number of ground water projects which upset the natural balance of ground water supplies resulting from a too rapid rate of water extraction.

As ground water tends to be one of the purest types of water, top priority will be given to the use of ground water supplies for human consumption. Use of ground water for industrial and agricultural purposes will be given second priority. This priority, listing, however, is flexible, depending on the locality. The way in which ground water should be used in each area will depend considerably on the amount and the quality of surface and groundwater supplies that are available in each locality and the extent and pattern of demand for water in that area. The Northeast with its severe drought problems has sufficient ground water resources for supplying small agricultural undertakings covering about 20 per cent of its total land area.

3.3 Water Use Policy

The utilization of water resources in multipurpose projects in general should follow the priority classification listed below.—

3.3.1 For Agriculture. As the Thai economy depends to a large extent on the performance of the agricultural sector, top priority must be given to the development of water resources for agricultural purposes, especially in the upper parts of the Greater Chao Phraya Irrigation project and irrigation schemes in the Northeast where irrigable land amounts to only 1.4 million rai or about 4 per cent of the total arable land. Though there are 22 basins of all sizes in the Northeast region, some of these areas have not been fully developed for irrigation such as the Chi and the Mun basins.

3.3.2 For Industry. The Government will carry out surveys and studies to locate additional water supplies and expand water distribution services to meet the increasing demand for water in the industrial sector. At the same time, industrial growth in each area will be limited to avoid the problem of water scarcity in each specific area.

3.3.3 For Human Consumption. As community areas have been expanding rapidly, it is essential to provide water for domestic use in urban and rural communities. As the Government aims at raising living standards in rural areas to check the widening disparities between rural and urban inhabitants, it will be necessary to implement as soon as possible schemes for supplying potable water for domestic consumption in rural areas especially through the use of groundwater supplies.

3.3.4 For Electricity. At present low cost electric energy is generated at several multipurpose dams, but there is a trade-off between hydroelectricity generation and the use of storage water for agricultural purposes. This problem is accentuated during the dry season. Thus, it is important to carry out surveys and studies to locate additional water supplies for these purposes.

3.3.5. For Flood Control. Each year flooding causes considerable damage to cultivated areas and affects the national economy and every day life to a significant extent. To alleviate problems due to flooding, it is necessary to support further studies of river catchment areas such as the Chao Phraya Basin in order to design measures for better water control and thus limit the amount of flooding each year. More specifically, additional information relating to the water level of major rivers will have to be obtained so that projections of water levels can be made and appropriate measure can be taken to limit flooding in urban and cultivated areas.

3.3.6. For Communication and Transportation. The oil crisis and subsequent expectation of increasing oil prices have stimulated interest in the use of navigable waterways for transporting goods. At present, low levels of water during the dry season and shallow stretches along major waterways such as the Chao Phraya and Pasak rivers are the main obstacles to all year round navigation. Thus, priority will be given to the dredging of various canals and rivers to facilitate the transportation of goods along these waterways all year round.

3.3.7. For Other Activities such as for Salinity Control and for Environmental Rehabilitation. Increased demand for water due to economic and population growth had the effect of reducing the volume of water flowing into the Gulf of Thailand. Subsequently, saline water intrusion from the sea got worse and adversely affected farms and gardens in the delta areas. In addition, the disposal of solid and liquid wastes from various industrial plants have increased the level of water pollution in rivers and canals and caused further hardships for the people living along those polluted rivers and canals. Occasionally, water must be released from reservoirs to drive saline and polluted water from such rivers and canals. As the supply of water is limited, studies should be carried out to determine the amount of water needed for salinity control and pollution abatement so that any excess use of water for this purpose can be minimized. In addition, water resources development projects such as reservoirs could be improved to create additional resort areas for recreational purposes and for promoting tourism.

3.3.8. For Fishing. Reservoirs of multipurpose projects could be used for developing fish resources and for fishing purposes. Various activities could be expanded or intensified including the conducting of research studies, experiments and investigations for developing fish resources, testing equipment for catching fish and other aquatic life, demonstrating and teaching inhabitants of the area the best fishing methods, breeding suitable fresh water fish and conserving aquatic life in the vicinity of the reservoir. These activities could help to increase the stock of freshwater fish.

3.4 Development Measures and Policies

3.4.1. A high level central agency to carry out studies and to formulate a water resources plan and appropriate strategies in collaboration with relevant agencies will be set up. This agency will thus have to estimate the amount of water required for different activities and for various development projects of different sectors at present and in future. At the same time, investigations into total existing water supplies and resources will be carried out. The water resources development plan will be formulated according to the following steps:

(1) Data on various aspects of water resources will be compiled and processed.

(2) Plans for the utilization and development of water resources on a nationwide basis will be formulated in relation to national development activities for various sectors.

(3) Projects will be selected and listed in order of importance. Project implementation will commence as soon as possible after the completion of relevant studies and tests.

(4) A water resources conservation plan will be formulated.

(5) A water resources management and supervision programme to improve the efficiency in water usage will be designed.

3.4.2. Vital projects relating to the conservation of water resources in basins and watershed areas will be designed in conjunction with schemes for conserving forestry and soil resources. Studies on the environmental impact of each major development project will have to be carried out prior to project implementation. In addition, projects for dredging ditches, canals, swamps and ponds will be carried out so as to improve the quality of surface water resources.

3.4.3 Laws and regulations concerning the control on disposals of garbage and human refuse into waterways will be revised with the view to conserve water and water resources and limit environmental pollution.

3.4.4. With respect to flooding, surveys and studies will be carried out so that plans can be formulated for limiting the extent of flooding in all areas of the country. Various projects will be prepared for developing water resources, particularly projects aimed at protecting forest areas and reforestation schemes. These projects are necessary for alleviating long-term constraints. Projects concerning the study and survey of large basins to determine the condition of waterways, water levels and the supply of water in various basins have to be speeded up. Modern

technology will be incorporated in the flood control plans. A forward flood warning system will be created. In addition, studies and surveys will be carried out to design drainage canals for channelling water from large basins directly to the sea so that during periods of abnormally heavy rainfall water can be diverted from urban areas and thus alleviate flooding in those areas. During the dry season, these drainage systems can be used for cultivating upland crops.

3.4.5 Projects to assist farmers in the arid areas of the Northeast and North will be formulated to deal with specific areas which have acute water shortage problems during the dry season. These areas will be identified in the Changwat (Provincial) Plans which will pinpoint the tambol (sub-district) and villages which need most assistance in the short run as well as in the long run. These projects will be included in the annual budgets. Thus, the projects that must alleviate short-run problems have to be completed in 1978 to be included in the budget for 1978/79 fiscal year.

4. Energy Resources and Fuels

4.1 Sources of Energy

Energy resources and fuels may be classified into two types according to their origins. The first type of energy is primary energy which includes water, solar energy, wind and natural fuels such as crude oil, coal, natural gas, geothermal energy, fissionable minerals, charcoal, chaff and the refuse fibre of sugarcane. The other type of energy, is secondary energy which is derived from the processing of the primary energy such as electricity, petroleum products, coke and gas fuels for domestic uses. Energy is a necessary input and is considered as a basic public utility which is crucial for national economic and social development.

4.1.1 Sources of Energy in General

Thailand's consumption of various forms of energy increased rapidly over the years. At present, petroleum products and gas account for 81.7 per cent of total energy consumption in Thailand. This is followed by hydroelectric power which accounts for 8.6 per cent of total energy consumed. The other forms of energy used in order of importance with their share in total energy consumption is as follows: refuse fibre of sugarcane (6.2 per cent), coal (2.4 per cent), wood (0.5 per cent), chaff (0.4 per cent) and charcoal (6.2 per cent).

4.1.2 Electric Energy

In 1975, the peak load requirement for electric energy was about 1,407 megawatts and electric energy of about 8,212 mKWH was generated from a total installed capacity of 2,438 megawatts comprising of hydropower 909 megawatt, thermal power 1334 megawatt, gas turbine 165 megawatt, and diesel generator 30 megawatt. Electricity generation in Thailand at present with existing technology requires fuel inputs equivalent to about 56-62 per cent of total electricity generated.

During the Third Plan period, demand for electricity increased at an average rate of about 14 per cent per annum. At present about 65 per cent of the total amount of electricity generated is consumed in Bangkok and electricity is available to only 20 per cent of the total population. During the Fourth Plan period, the electricity requirements are projected to increase at an average rate of 11 per cent per year.

4.2 National Energy Problems

As energy and fuels are necessary components of social and economic development and have strategic importance, it is essential to have a definite plan for energy utilization for normal and critical periods. In such a plan, optimal patterns of energy utilization should be proposed and measures for making Thailand more self-reliant in energy generation should be suggested. The recent energy crisis showed that Thailand is facing a number of serious energy problems. The more important problems are listed below:—

4.2.1 Underutilization of Domestic Energy Resources due to Absence of Basic Planning on Energy Usage

A recent survey of domestic energy resources and fuels such as hydropower, lignite, natural gas, crude oil and oil shale revealed that hydropower is the only source of energy that can be developed and utilized on a large-scale through the construction of hydroelectric dams. The survey located 92 domestic and regional potential multipurpose hydroelectric dam sites with a maximum electricity generation capacity of 20 million kilowatts. At present, 8 hydroelectric dams have been completed. In addition, the Chao Nen Dam and the Pattani Dam are scheduled to be completed in 1979 and 1981 respectively. Total installed capacity at present is 909 MW, with an electricity generating capacity of only 2,813 mKWH. The remaining potential hydroelectric dam sites are smaller than the existing ones but their development could provide an alternative source of electricity to the production of electricity through the use of fuel oil.

Domestic coal deposits have been located at Krabi, Mae Moh and at Li. These are lignite deposits with a total reserve of about 170 million tons of which only 76 million tons can be exploited economically. At present, about 5 million tons have been used mainly for generating electricity. A number of surveys and explorations are being made to determine quantities and the commercial viability of oil shales, crude oil and natural gas. However, not enough effort has been put into these surveys and studies due to the fact that oil, prior to the energy crisis created by OPEC oil price increases, was so much cheaper than other sources of energy that the development of alternative energy sources was not all that viable. Also, these surveys and explorations are rather expensive. As a result, potential energy and fuel sources in Thailand have not been developed. In future, surveys and further studies have to be carried out concurrently with the formulation of master plans for the production, the acquisition and the utilization of fuels in the long run.

4.2.2 Problems Relating to Fuel Oil

(1) The Increasing Amount of Consumption of Petroleum Products and Raising Oil Prices

The absence of direct and indirect measures for economizing on the use of petroleum products in Thailand means that increases in consumption of these products go on relatively unchecked. In 1975, national consumption of petroleum products amounted to 52 million barrels of which 42 per cent was consumed by the transportation sector (buses and trucks accounted for 36 per cent of the national total), 21 per cent by the industrial sector, 15 per cent by the electricity generating sector, and 22 per cent for domestic and other uses. The considerable increases in the price of crude oil has had the effect of dampening activities in various sectors, increasing domestic inflationary pressures and raising the import bill. Thailand's oil import bill increased from 4,661 million baht in 1973 (prior to the oil crisis) to as high as 12,571 million baht in 1974. The oil import bill in 1974 was equivalent to 20 per cent of the total import value in that year. The increase in oil prices by 10 per cent on October 1, 1975 had the effect of increasing Thailand's oil import bill by about 1,200 million baht. Thus the oil problem in Thailand is a severe one, as almost all crude oil supplies are imported and oil consumption is still on the increase. Although natural gas and oil deposits have been found in Thai territory, some time is still needed to ascertain their commercial viability. It will take some time before these deposits are commercially exploited. In the shorter run, with an increasing trend in crude oil prices, Thailand's balance of payments position will deteriorate and the rate of development in various sectors will also be adversely affected. It is thus essential to formulate detailed plans for future production, acquisition, and utilization of oil.

(2) The Domestic Oil Business

The domestic oil situation is characterized by being a producers and sellers market with foreign oil companies exerting considerable influence. The Government has limited bargaining power vis-a-vis these producers and sellers. The Government can, to an extent, influence the retail price of petroleum products, but this influence is not effective where it counts. In previous considerations of proposals submitted by oil companies and oil refining concerns immediately after OPEC oil price increases, the Government has had to use data and statistics supplied by the oil companies themselves, even though, the Government is supposed to supervise each step of operation. Part of the problem is that there is not enough coordination among the various agencies which are supposed to supervise the domestic oil business.

4.2.3 Electric Energy Problem

(1) Too Much Dependence on Oil as a Source of Electricity Generation. At present, about 56-62 per cent of the electricity generated in Thailand uses oil fuels as basic inputs, which is a very high proportion. This system of electricity generation is thus highly susceptible to changes in the price of crude oil which is largely imported from the politically volatile Middle East.

(2) The Scarcity of Electricity in Rural Areas. At present, 38,772 villages out of a total number of 47,725 villages in Thailand have no electricity. In other words, 81 per cent of all villages in Thailand do not have electricity. The number of villages without electricity in Thailand is expected to increase to 55,000 in the next 25 years unless the government puts special effort into the development of rural electrification. This means supporting the rural electrification project of the Provincial Electricity Authority and obtaining or supplying supplementary financing. If the PEA has to finance the rural electrification work on its own, the rate of expansion of such services will be considerably less than that desired by the Government.

4.3 Development Strategies and Measures

The Fourth National Economic and Social Development Plan has incorporated the following strategies and measures for the development of energy and various types of fuels:—

4.3.1 Guidelines for Basic Planning in the Field of Energy at the National Level

(1) A master plan for long term energy development will be formulated to develop domestic fuels and energy resources to the maximum extent possible, to promote energy savings, to increase efficiency in the utilization of fuels and energy and to reduce the use of imported energy and fuels. In addition, energy development will be coordinated with economic and social development in various sectors and adequate consideration must be given to the environmental impact of such projects.

(2) The government will promote additional surveys, research and investigations relating to domestic energy and fuels including the follow up of new developments on the search for new sources of energy, energy substitution and energy distribution systems.

(3) Every effort will be made to develop energy and fuel resources to the maximum extent possible, such as accelerating surveys to stimulate the utilization of lignite, carrying out surveys for additional hydropower sites, developing small hydropower sites, accelerating explorations to determine the amount of oil shale deposits in Mae Sod, and analysing the quality of oil shale for future use.

(4) The development of natural gas and crude oil in the Gulf of Thailand and in the Andaman Sea will be accelerated through the implementation of a definite policy to promote international cooperation in determining the commercialized amount of natural gas and crude oil in these areas. The development of natural gas will be given particular emphasis as its commercial quantity and quality are partly known.

(5) The hydroelectric projects for which detailed feasibility studies have been completed will be expeditiously carried out and the Government will consider proposals for installing additional hydroelectric generators at various dams, including the Bhumipol, Sirikit, Sirindhorn, and Chulabhorn dams.

(6) The government will accelerate the development of other potential hydropower dam sites to maximize the production and the utilization of hydroelectric power to substitute electricity generated from oil fuel.

4.3.2 Strategies for Solving Petroleum Problems

(1) The Establishment of a Government Organization to Develop and Manage Petroleum Resources. In order to solve various problems of the oil business in line with present and future national economic and security conditions, the government will establish an organization which will be responsible for controlling the management and allocation of different types of domestic fuel resources. This organization will also be responsible for the formulation of oil policy, the acquisition of crude oil, the control of oil production, oil refining and oil reserves for emergency situations, the transportation and marketing aspects and the investment in continuing projects in the form of joint ventures with foreigners. With respect to joint investment, the government will retain effective bargaining power and control over the major part of the activities of the joint ventures. The government will promote and/or will invest jointly with domestic and foreign private concerns as the oil industry demands huge investment and high technology.

This proposed organization has to have flexibility in operation and the Government will control only policy matters. In the early stages, relevant agencies will cooperate in the formulation of the appropriate structure of the proposed agency for attaining the stated objectives and to help solve the problems mentioned above.

(2) Economizing on Oil Consumption. Measures to save oil both in the short-run and in the long-run can be listed as follows:—

(a) Short-Term Measures

- (i) Measures for reducing oil consumed by government agencies and state enterprises on the administrative side will be implemented.
- (ii) Oil selling time will be limited.
- (iii) Tax measures to promote direct and indirect oil savings will be imposed.
- (iv) Mass media campaign to promote oil saving measures will be conducted.
- (v) Measures to reduce electricity consumed by government agencies and state enterprises in general and to control the extravagant utilization of electricity by business establishments will be implemented.
- (vi) Prices of petroleum products will be fixed in accordance with national economic conditions and if there is to be a future increase in the price of petroleum products, every effort will be made to minimize increases in the price of petroleum products such as diesel oil, fuel oil and kerosene which are essential to the livelihood of the majority of the population.

(b) Long-Term Measures

- (i) The mass transit system will be restructured to increase operational flexibility and to maximize economic efficiency.

(ii) The Government will encourage industrial plants to economize on fuel consumption through such measures as the promotion of the types of industrial equipment which help to reduce the consumption of oil by offering special tax incentives.

(iii) A long term plan to expand the present capacity of existing oil refineries will be formulated to maximize efficiency through economies of scale. Optimum plant size should be achieved by existing refineries prior to the establishment of new refineries. In addition, existing refineries will be adapted to process several types of crude oil with greater emphasis on relating the rate of consumption of individual petroleum products to the rate of production of that product from the types of crude oil imported from various sources.

(iv) Oil prices will be adjusted at appropriate intervals to ensure a proper relationship between the production and consumption of various types of petroleum products. However, this should be carried out so that disruptive effects on economic activities are minimized.

4.3.3 Strategies for Solving Electric Energy Problems

(1) Electric energy generating sources will be diversified to promote the use of new sources of fuels such as natural gas and fissionable minerals in place of oil. Existing sources such as hydropower and lignite will be utilized to a larger extent to reduce the dependence on oil for generating electricity. The introduction of nuclear power plants for generating electricity is another alternative choice that is available for reducing Thailand dependence on oil as a source of energy in the long run.

(2) A development plan for an electric energy system will be formulated to provide a stable and sufficient level of production in response to all types of electricity requirements at a low cost of production. Such a plan must be consistent with the allocation of investment funds for the development of other sectors. In addition, emphasis will be given to the problem of controlling environmental pollution.

(3) Disparities in electricity rates in the Central areas, the provincial areas and in private concessionary areas have to be adjusted more equitably. At present, the electricity rate on dwellings is the same all over the country and, in the near future the Government will consider the proposal to equalize other rates, especially for business and industry in order to promote the distribution of growth to provincial areas. However, such electricity rates have to be high enough to cover the operating costs of EGAT in order not to increase the burden on the Government budget.

(4) Rural electrification will be accelerated to spread economic growth to rural areas. It is assumed that electricity is the main component in the development of basic infrastructure and the major factor in raising productivity in rural areas. For example, the utilization of electricity in rice mills has helped to increase production and reduce cost per unit. Electrification in rural areas has also brought about the use of electric pumps for consumption and irrigation purposes, the development of agro-industries, cottage industries, the development of methods for preserving agricultural products and the utilization electric power for cold storage facilities for various communities.

Thus, the development of rural electrification will contribute towards the reconstruction of rural societies, the improvement of living standards, education, health, including the reduction of the rate of migration to urban areas which is a main policy of the Ministry of Interior and the Fourth Plan with its emphasis on rural development and income distribution to rural inhabitants. In addition, areas with low economic potential will also be developed if sufficient social and political returns exist. The rural electrification programme during the Fourth Plan period aims at the provision of electricity to an additional 5,200 villages at the minimum, including the electrification of about 2,900 tambols by 1981.

5. Mineral Resources

5.1 Current Situation and Problems

Previously, the mining industry in Thailand was very much dominated by tin. With subsequent development, the output of other minerals such as fluorite, gypsum and lignite became more prominent. In addition, significant increases in the output of a number of other minerals such as iron, antimony, manganese and lead have been achieved. During the Third Plan, new mineral deposits were found and mineral output expanded to include tungsten (wolfram and schellite), barite and zinc. Total export earnings of these new minerals exceeded 400 million baht. Mineral output in Thailand to a significant extent depends on foreign demand, as Thailand still had very few mineral processing industries.

During the period covered by previous Plans, the mining sector did not expand rapidly. Its share in the total gross national product remained rather stable throughout the past 10 years, that is at about 2 per cent of GNP. The average rate of growth of the mining sector was only 3.4 per cent per year which is very low compared with other industrial sectors. The expansion of mineral production in the past was hampered by several problems which must be alleviated as soon as possible. Some of the more important problems are listed below.

5.1.1 Problem Relating to the Livelihood of the Population and the Conservation of Mineral Resources. Several mining operations are surface mining activities which yield low economic returns due to inefficient methods at mining and the application of inappropriate technology. The output of these mining operations is lower than it should be because of conflicts between rival mining groups, such as tin mining at Phangnga and tungsten mining at Khao Soon in Nakhon Si Thammarat and at Doi Mok in Chiang Rai. Mining provides livelihood for many people (even though the economic return is low), but it results in the destruction of natural resources.

5.1.2 Problem Concerning Mining and Agriculture. Most of Thailand's mineral deposits that are commercially exploitable are located in the Southern and Northern regions. These deposits are often found in areas that are suitable for cultivation or areas which should be preserved as watershed areas. In such cases, conflicts of interest arise between two different occupational groups.

5.1.3 Problem Concerning Environment and Mining. Mining operations may pollute the environment and adversely affect marine fish resources. Measures to lessen and/or prevent such negative effects will be found to improve the situation.

5.1.4 Other Obstacles to the Expansion of Mineral Output. Preliminary geological surveys indicate that Thailand still has numerous deposits of other minerals in various provinces which could be developed. However, a number of problems must first be solved. These problems include the following:—

(1) Problem Concerning Financial Resources to Develop the Mining Industry. The development of mineral resources in Thailand has been hampered by a lack of funds for mining development. The amount of credit extended for mining activities is equivalent to only 3.3 per cent of the total sum of credit offered to other industries. In addition, most of the credit extended has been for production purposes. Not enough credit has been extended for survey and development of mineral resources linked to industrial production. Financial institutions in general are not interested in extending credit to these fields due to high risks involved.

(2) Problem Concerning Technical Data. Many decisions to invest in the mining sector have been delayed or held back because of a lack of detailed geological data concerning mineral resources. Existing information should be made available to interested private investors in order to provide preliminary data for these private concerns to invest in necessary surveys and other activities for developing larger mineral deposits.

(3) The Absence of Basic Infrastructure and Services to Support Mining Activities. Basic economic infrastructural services such as roads and electricity are essential for the development of mining activities in provincial areas far away from the main lines of communication. Private investors could not invest in the construction of such infrastructural services due to their small-scale mining operations.

(4) Marketing Problem. The history of mineral resources development in Thailand is also characterized by periodic imbalances in demand for and supply of various minerals. For example, for certain minerals such as fluorite, a large amount of capital is not required for increasing the level of output and relatively rich mineral deposits are available. However, a lack of timely reports and information concerning market demand and changes in the prices of these minerals has resulted at times in unnecessary over-expansion of output of various minerals.

5.2 Development Strategies and Measures

In promoting the development of mineral resources during the Fourth Plan period, a number of policies and operational procedures will be adopted to promote surveys, production, marketing and public services. In addition, a set of mineral resources development strategies will be laid down. The main policies and strategies are outlined below:—

5.2.1 Investment Policy for Developing Mineral Resources. Investment policies for the mining industry from the feasibility survey stage to the mineral processing stage can be summarized as follows:—

(1) The Government will support investments made by domestic private concerns in small and medium-sized mines that can be effectively operated by such investors. These types of investments include surface mining of tin and other mineral deposits which do not require sophisticated and complex mining techniques.

(2) For a number of medium-sized investments domestic private concerns have acquired the necessary techniques, such as offshore tin mining or certain types of underground mining. However, if private concerns are not able to mobilize sufficient financial resources for such ventures, the Government should consider joint investment with private concerns during an initial period and then sell its shares at a later date to convert the venture into a public company.

(3) With respect to large mining operations which require huge capital outlays and the use of modern production methods and complex technology which local investors do not possess, the Government should carry out joint investments with local and foreign investors.

5.2.2 The Formulation of a Land-Use Plan for the Mining Industry.

To prevent and to solve potential conflicts among various activities concerning forestry, agriculture and environmental protection as well as to promote the production of land-use maps relating especially to the mining industry, the Government will adopt the following land-use strategies:—

(1) Land-use maps relating specifically to mining aspects will be produced by collecting data from mining areas and areas which have been surveyed to determine the extent to which mineral deposits are commercially exploitable.

(2) A set of economic land-use policies will be formulated by a central agency which will be established to coordinate all activities in this field. In addition, an "economic land-use policy" committee will be set up to formulate a definite land-use plan concerning forestry, agriculture and mining. This committee will consist of high level officials from relevant agencies who should be able to ensure the implementation of agreed measures.

(3) Areas previously used for mining purposes will be rehabilitated for other uses.

5.2.3 Government Assistance

Strategies relating to infrastructural projects, capital mobilization and technical knowhow in the mining sector will be formulated to support private investment in this field in accordance with the policy to promote the distribution of industries to provincial areas.

(1) Economic infrastructural projects will be expanded into provincial and remote areas to support mining activities which are dependent on transportation networks, electricity and communication.

(2) The Government will provide financial support especially for the promotion of mining activities.

(3) Projects concerning the nationwide survey of geological data and geo-mineral resources will be promoted to collect more detailed data which will be released to interested private investors so that such surveys are used to a greater extent and the development of mineral resources can be accelerated.

5.2.4 The Promotion of Mineral Output. More surveys will be carried out in areas known to have mineral resources to expand survey coverage to areas which have good prospects for mineral development but have not been developed as yet. This should also help to promote the production of other minerals in addition to the limited number of minerals that are presently being mined on a commercial basis.

5.2.5 The Establishment of a Financial Institution to Develop Mineral Resources. The Government will support the establishment of a financial institution for mobilizing private funds from foreign and domestic sources to contribute to the financing of mineral surveys and to the development of commercial deposits of minerals which are in great demand. This proposed institution should promote more efficiency in mining operations and the utilization of modern equipment.

5.2.6 Marketing and the Maintenance of Price Levels. Studies of current economic situation and prospects in the mining sector and the market for each important mineral that Thailand exports will be supported. At the same time, measures will be implemented to regulate mining production so that mineral supplies are roughly in line with demand conditions. Measures to promote a greater degree of price stability include cooperation with other mineral producer countries similar to the International Tin Agreement and the formation of an association or group of domestic mineral producers so that there is more cooperation on production and marketing matters.

5.2.7 The Improvement of Government Administration. Administrative regulations and procedures of the relevant government agencies in areas concerning the regulation of the mining industry will be revised as rapidly as possible.

6. The Development of the Environment

6.1 The Causes of Environmental Problems

Environmental problems are the result of three major factors:—

6.1.1 Population Increases. This generates an increase in the demand for the use of natural resources for providing basic human needs. For example, the rapid increase in the demand for arable land has tended to cause deforestation and encroachment into forest areas which in turn endanger the preservation of the natural environmental balance. The demand for other natural resources such as water, air, minerals and energy derive mostly in response to increasing demand. The problem is that these limited resources are not being used efficiently, and without regard to future demand. This is because of an absence of a resources utilization plan. The current deterioration of the natural environment may lead to serious consequences in the future if natural resources continue to be destroyed and/or are carelessly used.

6.1.2 Human Settlements are man-made environments which may cause changes in natural environmental conditions. Rapid urbanization without planning and without a city plan generates a number of urban problems such as inefficient and disorderly land-use patterns, traffic congestion, scarcity in public utilities and other services in general including recreation. These deteriorating conditions have their effects on the physical, social, and quality of life of urban inhabitants.

Normally, urbanization is accompanied by industrialization as industries located near large cities have certain advantages such as a larger market for their products and better facilities such as transportation, and other infrastructural services compared with small towns or communities. The expansion of the industrial sector without overall planning or supervision often causes water and air pollution due to the disposal of wastes from industrial plants. These externalities generate problems relating to health and the quality of life of the population.

6.1.3 The Application of Modern Technology in Agricultural Production. The application of fertilizers and insecticides in certain cases causes a deterioration in soil conditions and soil pollution which may spread into rivers and streams and may also create a water pollution problem. In the industrial sector, certain production methods involve the use of lead substances, mercury, arsenic and other chemicals which are harmful to the health of the population. In addition, some of these compounds produce residues which are difficult to cure or to eliminate. The use of energy can also cause environmental problems.

As environmental problems are caused by humans and human actions, the formulation of plans to correct or to improve environmental quality has to start with the human factor.

6.2 Major Environmental Problems

The compilation and analysis of data obtained from various studies and research programmes, meetings of committees concerning environmental problems and the appeals from the mass media and various conservationist groups suggest that the major environmental problems are as follows:—

6.2.1 Problems Concerning the Deterioration of the Environment and Natural Resources Management

(1) At present, the rapid rate of deforestation of national forest resources is a problem of major concern since national forest areas have been reduced to only about 37 per cent of the total land area. This problem is aggravated by the felling of trees in watershed areas which are vital to the preservation of the natural environmental balance and, in turn, to the survival and the future of the people of Thailand.

(2) Inefficient use of soil, the cultivation of unsuitable plants in relation to soil quality and the planting of crops which cause rapid soil exhaustion such as tapioca have resulted in the deterioration of agricultural land.

(3) Inappropriate and wasteful utilization of mineral resources, illegal mining and unsuitable mining techniques have not only caused a deterioration in the quality and quantity of mineral resources, but have also created adverse effects for various communities.

(4) The unplanned growth of urban areas has resulted in the primacy of the Bangkok Metropolis and an unbalanced spatial distribution of urbanization. The large disparities in the number of people living in the primate city, regional centres, secondary cities and communities in rural areas have resulted in considerable waste of government resources in the allocation of services and public utilities. In addition, urban and industrial areas have expanded into fertile agricultural land or areas reserved for the preservation of natural balance.

(5) There are now a limited number of natural tourist attraction areas and many of the natural tourist attraction sites and areas suitable for recreational purposes are becoming polluted. This is largely because such areas were not protected in advance against squatters.

(6) Measures to preserve historic buildings and sites and other constructions which have cultural and/ or architectural value for future generations are lacking.

6.2.2 Environmental Pollution Problems. Environmental problems could take place anywhere but in areas with high population density and with a heavy concentration of industries such as the Bangkok Metropolis and other big cities, environmental problems are more serious. More specifically, the big urban areas suffer from :—

(1) the deterioration of the quality of water: both surface and sea water.

(2) the destruction of aqua environment, including the life cycle of animals and plants both in fresh and sea water.

(3) the problem of polluted air from poisonous gas emitted from industrial plants and car exhaustion pipes which will adversely affect health, animal and plant habitat and cause direct damage to private property. Note that the Revolutionary Council Decree concerning black smoke emission from car exhaust pipes has not been enforced seriously.

(4) problems from noise and vibration which disturb people and may generate harmful effects on the physical and mental health of city inhabitants.

(5) garbage, which causes a number of other environmental problems such as polluted water and air is also a source of diseases and germs which is directly harmful to public health.

6.3 Strategies and Measures for Environmental Development

Environmental development has to depend on the coordination of many agencies both in the formulation and in the implementation of policies, since the Promotion and Preservation of Environmental Quality Act of 1975 does not authorize any specific agency to be responsible for the administration and control of environmental quality. Thus, within the framework of the existing law, the present environmental development strategies both in the short and long term are as follows :—

6.3.1 Short Term Measures

(1) The strict enforcement of existing laws to prevent or to reduce the causes of environmental problems and to minimize environmental deterioration. This applies particularly to the Industrial Factories Control Act, the Traffic Act, the City Plan Act, the Fishery Act, the Municipalities Order on Food Control, and the Revolutionary Council Decree on Black Smoke Emission from Car Exhaust Pipes.

(2) Budgetary support will be given to projects for developing the environment, especially projects which aim at solving immediate environmental problems or at improving the quality of the environment.

(3) Assistance will be sought from private individuals and organizations in the attempt to promote environmental quality.

6.3.2 Long Term Measures

(1) A national environmental development plan will be formulated for use as a general framework in the Government's management of the environment.

(2) The coordination of policies and operations of government agencies concerning environment will be strengthened by the creation of mutual exchanges of data and technical know-how within the general framework provided by the national environmental development plan.

(3) The control of environment quality will be carried out by stipulating environmental quality standards as guidelines for government agencies and private concerns. These standards will also be used as criteria in the appraisal of various projects. In addition to comparing cost-benefit ratios, projects will be revised to minimize their impact on the environment. Projects which may have serious repercussions on the environment may be rejected. In addition, laws governing specific matters will be passed to control environmental quality such as the Water Quality Act, the Air Quality Act and the Fisheries Act to correct the present legal loopholes and to facilitate efficiency in enforcement.

(4) Measures will be recommended to improve the administrative system of government agencies working in this field in order to increase their operational efficiency.

(5) Public relations to alert the population on environmental problems and damages caused by the destruction of the environment will be carried out by providing training in this field for various government officials. This training should lead to the formulation and implementation of plans by individual agencies. Campaigns will be carried out in activities supporting the promotion of environmental well-being.

(6) Nationwide formulation of overall city plans and individual city plans will be expedited with the objective of preventing further environmental deterioration.

(7) Industrial plant permits will stipulate conditions concerning the prevention of adverse effects on the environment and plant layouts will have to be submitted for approval prior to the issuance of the permits. In addition, the Government will exercise its power to close down factories which violate these conditions.

CHAPTER II

RURAL PRODUCTIVITY IMPROVEMENT AND DIVERSIFICATION

1. Introduction

In 1976, approximately 30.1 million people (5,280,000 farm families) or 70 per cent of the total population made a living in the agricultural sector. The total real income generated by agriculture accounts for 97,135 million baht or 30 per cent of Gross Domestic Product. Taking this into consideration, the average income per capita of Thai farmers in 1976 was 3,450 baht. This is lower than the national average of 7,580 baht per capita. As such, it is vitally important to increase agricultural income in order to bring about a more equitable distribution of income. To this end, the maximum utilization of existing underemployed or seasonal unemployed labour in agriculture is a pre-requisite for the increase in income and the improvement of living standards of farmers as well as for the real increase in national production.

At present, average earnings of farmers are not only lower than the national average, but within the agricultural sector itself, income also varies according to differences in productivity. This difference can be explained largely in terms of the ownership of factors of production which has already been mentioned in Chapter 1 of Part 3 and in terms of the location and differences in soil fertility. From a total of 109 million rai of cultivated land at present, approximately 89 million rai are located outside irrigable areas with different soil fertility. Production in these areas is dependent on soil quality and the quantity and timing of rainfall. Farmers in these areas are continually confronted with the possibility of drought or flood. In these areas, there are few crops such as sericulture and vegetables which can generate employment on a year round basis. Outside these irrigable areas, there are also areas where various crops such as maize, cotton, tobacco and beans are grown under a system of rainfed agriculture in which double cropping can be undertaken in the early and later parts of the rainy season. This generates employment for about 7-8 months per year. Production of these crops is dependent on the quantity and the duration of rainfall which are exogenous factors. Other areas can only be used for rainfed agriculture producing one single crop per year. These areas are located mainly in the Northeast Region. Of the total cultivated area, only 10 million rai has adequate water control from the existing irrigation system. Another 10 million rai still lacks an effective system for water distribution and control and only 3 million rai of cultivated land has water control adequate for double cropping by irrigation and pumping methods.

The facts mentioned above indicate clearly that the incidence of poverty among Thai farmers rests very heavily on the landless or small holders particularly those who live in rainfed single crop areas with inferior soil quality. These farmers, numerous as they are, constitute a major problem for agricultural development. The improvement of their productivity requires a colossal effort and substantial amounts of resources. The amount of increased production fluctuates according to weather

conditions. Even if production can be increased, it is still subject to violent price fluctuations. When the price of agricultural commodities drop, these farmers are greatly affected through the decrease in their income.

2. Strategies for Increasing the Level of Agricultural Income and Output

In order to raise agricultural production and income, the Fourth Plan lays down the following strategies for the formulation of public programmes to improve production structure and employment in the agricultural sector :—

2.1 Production Diversification

Further diversification of production is aimed at generating new employment opportunities for the agricultural labour force. To this end, diversification will be promoted in areas where substantial underemployment exists. Agricultural diversification will be encouraged in other areas as well, to alleviate the risk of income fluctuations which would result from over dependence on a single crop. More details on this will be presented in section three of this chapter.

2.2 Productivity Improvement

Investment in irrigation facilities will be expanded to store and control water for increasing agricultural production in various areas. Water charges may be levied on those who directly benefit from these projects to provide fair treatment for those who do not have access to irrigation facilities. Moreover, in order to increase agricultural productivity, more emphasis will be placed on the improvement of soil quality in less fertile areas. In addition, agricultural extension will also be strengthened to disseminate new research findings available in the Government demonstration plots to farmers. This will be undertaken through the promotion of farmers groups of various types so that they can help each other to expand production and marketing.

2.3 Agricultural Prices

Raising prices of agricultural output at the farm level is a pre-requisite for improving farmers' incomes in the short run. Due to administrative difficulties, the Government's price guarantee programme has so far achieved very limited results. In future, minimum prices for agricultural commodities will be set at a more realistic level and crops produced mainly by poor farmers will be given special attention. In addition, the Government's scheme of direct purchase from farmers' groups is one method of reaching farmers. To effectively assist farmers' groups and agricultural cooperatives on the marketing side, the Government must formulate clear-cut policies on this matter and give its full commitment. To cushion the impact of violent price fluctuations, the Government may have to set up a marketing council, establish a buffer stock or implement some other measures to help farmers in this matter. Lastly, farmers organizations and cooperatives will be promoted to assist farmers on the marketing side and on long term price stabilization.

3. Agricultural Diversification

3.1 Background

During the Third Plan period, not much agricultural diversification was achieved. The structure of agricultural production is still dominated by six major crops, that is, rice, maize, sugar cane, tapioca, rubber and kenaf. The total area under these crops accounted for 88 per cent of the total cultivated area. In terms of value-added, these crops accounted for 52 per cent of the total value of agricultural output. As for export value, these crops account for 88 per cent of total agricultural exports. During the Third Plan period, the importance of these crops increased significantly, compared with the situation at the end of the Second Plan period when these crops accounted for 84 per cent of the total cultivated area, 44 per cent of total value-added from crops and 87 per cent of the total value of agricultural exports. This last statistic indicates that more farmers will be affected by fluctuations in the world price of these 6 major crops. Though the relative importance of these six major crops has increased, during the Second and Third Plan periods, there has been some changes in the size of planted area for each of the major crops with some substitution among the major crops taking place. Area planted to maize, tapioca and sugar cane have expanded rapidly while area under paddy has shown a decreasing trend. During the Fourth Plan, further diversification has to be encouraged so that farmers will not have to rely too much on any particular crops.

During 1972–1976, production of cotton, dairy products, tobacco and silk rose slowly. Production of cotton has decreased while cotton imports have increased. Certain crops such as oil seeds, oil palm, fruits and vegetables are required by domestic agro-industrial plants and can easily be sold in overseas markets, but the problem is on the supply side. Hence, it is thus necessary to promote the expansion of these crops and other crops with good market potential during the Fourth Plan period.

In view of the above information, more agricultural diversification will be encouraged during the Fourth Plan period to generate more employment opportunities and to reduce risks from depending on a few crops. Nevertheless, the extent to which further diversification can be carried out is very much dependent on the availability of cultivated land. Evidence accumulated suggests that the diversification process which took place in recent years has resulted in the expansion of planted area from 49.3 million rai in 1961 to 109.4 million rai in 1975. This expansion has caused a considerable amount of encroachment into forest areas and has been a major factor explaining why forest areas have diminished to only 37 per cent of the total land area in 1975. To conserve forest resources, a principal objective of the Fourth Plan, the expansion of cultivated areas for agricultural diversification in future should not exceed 500,000 rai per annum. During 1961–1976, cultivate areas expanded at an average rate of 4.8 million rai per annum.

3.2 Policies

Given these facts and constraints, the main policies for agricultural diversification during the Fourth Plan period include the following:—

3.2.1 To undertake agricultural diversification through more intensive use of land and underemployed labour on a year round basis.

3.2.2 To encourage diversification of crop production away from the six major crops so that risks from price fluctuations which affect farm income levels can be lowered.

3.3 Development Strategies and Measures

To attain the afore-mentioned policies, the following strategies and measures have been set for agricultural diversification during the Fourth Plan:—

3.3.1 Diversification Through Better Utilization of Existing Resources.

This strategy involves the promotion of intensive agriculture and mixed farming in which production can be undertaken on a year-round basis. More specific measures have also been designed for each agricultural sector:—

(1) **Livestock.** Within the agricultural sector livestock rearing in terms of output value is second only to crop cultivation. The most important farm animals at present are cattle, water buffaloes, swine and poultry. In recent years, consumption of the products of these animals has increase in response to population growth. In the past, cattle and water buffaloes were raised as draft animals and for consumption. However, in view of the increased demand for livestock products in world markets and increased mechanization, livestock raising for selling in foreign markets and for domestic consumption should be encouraged. In the Fourth Plan, the Livestock Development Project, located on a high plateau with low soil fertility in the Northeast Region will be one major step towards encouraging livestock production in Thailand. In addition, the Government will encourage livestock rearing in the Southern region which is a disease-free zone. Various measures will also be adopted to encourage the raising of beef cattle in order to supply meat directly to the market on an urgent basis. On this matter, many problems have to be solved simultaneously. For instance, to improve the marketing side, it is necessary to pay more attention to the quality of the cattle and water buffaloes. The import of best quality meat from foreign countries has to be discouraged. The slaughtering and exporting of male cattle and water buffaloes without any age restriction should also be revised. Relevant legislation and export controls must be modified to bring about the desired changes. To stimulate livestock production and promote the export of cattle and water buffaloes, the Government must expand its livestock breeding programme, strengthen measures for the prevention of epidemics and take action against thieves. In future, cattle raising projects should aim at encouraging cattle grazing in common pastures together with dairy cattle and other animals in a coordinated manner.

In order to expand dairy cattle farming and to increase the supply of fresh milk in the Central, Northeast and Northern regions, it is necessary to increase the number and quality of cattle by expanding the artificial insemination programme both for local cattle owned by farmers and for cattle at Government Livestock Breeding Stations. The problem of pre-mature birth must also be eradicated. Assistance from F.A.O. will be sought along with the extension of long-term credit to finance the procurement of dairy cattle and necessary equipment in dairy farming. With respect to marketing, purchasing centres will be established in areas where milk supplies are beginning to be available. It will also be necessary to set a minimum price for fresh milk so that both producers and consumers benefit. In this matter, the government will have to subsidize producers during the early stages, provide tax concessions on dairy farming equipment and organize a publicity campaign to encourage the public in general to consume more dairy products.

Many Thai farmers raise pigs. As these pigs are raised by various households, scattered here and there, it is difficult to control disease and to reduce costs. Better methods for raising and breeding pigs are available and should be introduced to the farms. Major programmes and projects in the Fourth Plan aimed at solving some of these problems include pig breeding, collective pig farming for the prevention of epidemics and improvements in animal feed for pigs. To support these projects, the government will encourage joint research between the Livestock Department and various universities and make more effort to disseminate research findings to pig farmers. On the marketing side, more effective planning is needed to improve the procedures whereby live pigs are sent to slaughter houses. To solve the endless cycle of period of over-supply and periods of shortages, it will be necessary to improve planning on the marketing and processing sides. Efforts must be made to coordinate the activities of pig farmers, distributors and slaughter-house owners.

(2) Fisheries

Thai fishing is highly dependent on natural supplies of fish. Aquaculture is still relatively insignificant. In recent years, the use of unsuitable fishing gear and equipment as well as overfishing has brought about a significant decline in the stock of fish in the Gulf of Thailand. The depletion of demersal (bottom living) stocks in the Gulf of Thailand has made it necessary for fishermen to increase off-shore fishing in international waters which involves higher costs. It is likely that in the very near future, each country will expand the limit of its territorial waters to 200 nautical miles which will greatly affect the development of Thailand's deep sea fishing. Hence, it is necessary to develop brackish water fishing. This can be done through the promotion of aquaculture in coastal areas. In addition, fish processing industries should be encouraged. More emphasis will also have to be placed on the conservation of marine life and the rehabilitation of water resources. Joint ventures in the fisheries sector should be undertaken with other countries. Other measures include more attention on the economics of fishing and the provision of education and training on deep sea fishing in order to raise the living standards of fisherman.

(3) Sericulture

Sericulture is an activity which can generate employment and supplementary income for underemployed children, women and old people on a year round basis. Modern techniques in sericulture have already been adopted in the Northeast Region and relatively high quality silk warp is now being produced. Nevertheless, at present, the domestic supply of silk warp is still inadequate so imports from foreign countries are required. During the Fourth Plan period, sericulture will be expanded in the Northeast, particularly in the drought areas where the average output per rai is very much lower than in other areas.

(4) Rubber

The improvement of rubber productivity can be justified on the ground that rubber is a labour intensive industry and it provides employment all year round. Rubber tapping in particular can be done for ten to eleven months each year. During the Fourth Plan, major rubber development programmes and projects will be implemented, including the acceleration of rubber replanting to raise the standard of living of people in the Southern part of the country.

(5) Vegetables and Fruits

The cultivation of vegetables and fruits also generates year round employment. During the Fourth Plan, the government will encourage the cultivation of vegetables and fruits which can be used as inputs for agro-industrial plants. The growing of vegetables and fruits for preservation or canning should be done in areas close to factories and/or near markets. Major projects include the improvement in the quality of vegetable seeds and the introduction of methods to ensure higher quality products. More attention will also be given to fruit growing.

(6) Tobacco

Tobacco planting will be promoted particularly in the North and Northeast regions. This crop only takes 70-75 days to reach maturity and five crops can be produced in a single year. This is one of the crops which has good export potential. To promote tobacco cultivation, it is necessary to improve the system for purchasing tobacco from farmers to encourage productivity increase. In addition, the utilization of higher proportion of Thai tobacco in producing cigarettes by the Thai Tobacco. Monopoly should be encouraged, along with provision of higher operating capital to various forms of tobacco cooperatives to enable them to increase their export capabilities.

3.3.2 Shift in Cultivation from Major Crops to Other Agricultural Crops. In promoting the cultivation of less important crops and thus reduce the degree of dependence on the six major crops, resource endowments in each region have to taken into consideration. Regional analysis of this can be summarised as follows:—

(1) North. The upper part of this region has abundant forest resources and is an important watershed area of the country. In recent years, however, there has been considerable deforestation characterized by shifting cultivation. Production diversification in this region can best be achieved through the promotion of vegetable cultivation and highland fruits growing. In the lower part of the Northern region much diversification into upland crops has already occurred. As such the government should encourage the cultivation of other upland crops such as cotton, tobacco, soybean and beans.

(2) Northeast. This region is situated on a high plateau with low soil fertility hence the promotion of upland crops has to be done on an intensive basis particularly for maize, cotton, beans and tobacco. Since the shortage of water for consumption and cultivation in this region cannot be effectively solved by the construction of irrigation projects due to the lack of water supplies, production increase will depend very much on the improvement of rainfed technology.

(3) Central. The Central Region is basically a flat plain with relatively good irrigation system. There is more potential for increasing production and diversification in this region than in other regions. At present, the major crops planted in this region are rice, maize, sugarcane, beans, vegetables and fruits. The basic development approach that is to be used for this region for stimulating agricultural output will rely on the intensification of production in irrigated areas in which water can be controlled throughout the year.

(4) South. High humidity in this region is very well suited for forest plantations. The major cash crop planted at present is rubber and there is a good potential for diversifying production into palm oil, coffee, fruits and coconuts. These crops have already been planted in the Southern region, but production is still below domestic requirements.

4. Agricultural Productivity

4.1 Present Situation

Agricultural productivity increased rather slowly during 1970-1974. During this period, average yield per planted area of sugarcane, paddy, maize and rubber increased while the productivity of kenaf and tapioca actually declined. Average productivity for Thailand's six major agricultural export commodities increased by only 1.8 per cent per year. Poultry production, however, increased markedly due to heavy private investment in the animal feed industry. Cattle production increased slowly at an annual rate of about 2 per cent. Fresh water fishing catch expanded at an annual rate of 10.8 per cent while productivity of aquaculture along the coasts has not improved as much as was anticipated.

Inadequate investment in the agricultural sector is the main reason why agricultural productivity increased so slowly. Furthermore, public investment in this sector in the past has concentrated mainly on the construction of infrastructural facilities, notably dams and roads. By comparison, not enough public development expenditure was allocated to on-farm development activities. Average productivity on private farms as a whole are well below the level achieved in the government demonstration plots. While this discrepancy suggests that Thailand's potential for expanding agricultural production is quite considerable, it also indicates rather clearly the fact that basic investment in land and irrigation systems as well as modern agricultural inputs are still not available to the majority of farmers. It is, of course, not possible to expect all farmers to achieve the level of productivity attained in demonstration plots, particularly in areas where irrigation facilities can not be provided. Nevertheless, provision of modern agricultural inputs to a large number of farmers both within and outside irrigated areas are required to raise agricultural productivity in general. More details on this will be presented later.

The situation with respect to major agricultural inputs as existed during the Third Plan period can be summarized as follows :-

4.1.1. Arable land

The lack of cultivated land and tenancy problems have become more serious in recent years. These problems are particularly pronounced in more fertile Central and Northern regions. In the Central region, for instance, tenancy accounted for 40.7 per cent as compared with that of only 2.7 per cent in the Northeast where soil fertility is relatively low. The lack of land ownership is an important factor which discourages farmers from carrying out land improvement.

To date, there is still plenty of unsuitable land for cultivation. However, potential for development still exists, particularly in the sulphate soil areas in the Northeast which cover 8 million rai, mangrove swamps along the Southern coastline of 1.24 million rai and coastal sulphate soil areas of approximately 400,000 rai.

The amount of farm land that is not brought under cultivation has been increasing yearly, as indicated by the decrease in the proportion of cultivated land to farm land from 91.5 per cent in 1967 to 82.6 per cent in 1973. This suggests that a substantial amount of farm land which used to be cultivated has been abandoned as a result of the deterioration in soil fertility. As the amount of irrigated area is limited, most of the cultivated area can be used only during the rainy season.

4.1.2. Irrigation

At present, about three quarters of total cultivated land area is dependent on rainfall for water supplies. Irrigated areas total 19.8 million rai, or about 18.1 per cent of total farm areas. However, it has been estimated that only about 10.2 million rai is effectively irrigated. This figure actually refers to wet-season irrigation. Dry season irrigation only covers an area of 4.8 million rai of which only 2 million rai or

about 4.4 per cent of total farm area has water control adequate for double cropping. The Central region has the highest share of irrigable area, accounting for approximately 11.7 million rai as compared with 2.4 million rai in the Northeast. It should also be noted that in the Northeast, some 33,000 rai are classified as irrigated during the dry season or about 0.7 per cent of the total farm area of the region.

During 1966-1974, the size of irrigable areas expanded at 400,000 rai annually. The area served by ditches and dikes increased at 530,000 rai per annum while pumping irrigation for paddy cultivation increased its coverage by 60,000 rai per annum.

4.1.3 Fertilizer

The rate of fertilizer application in Thailand is still low, averaging 3.8 kg. per rai of total planted area as compared with an average of 9 kg. per rai in other Asian countries. Nevertheless, fertilizer consumption in Thailand had increased from an annual average of 250,000 to 300,000 tons during the Second Plan period (1967-1971) to 350,000-400,000 tons during the Third Plan period (1972-1976). It is estimated that fertilizer is applied in an area of only 21.7 million rai. Regionally speaking, about 59 per cent of total fertilizer consumption is consumed in the Central region. In terms of the rate of fertilizer application per area planted, the Southern region had the highest rate of 20.3 kg. per rai as compared with the lowest rate of 8.1 kg. per rai in the Northeast.

4.1.4 Seeds

The Government's agricultural research stations have devoted most of their resources to seed multiplication, but the amount of quality seeds produced is still inadequate to meet the needs of farmers. At present less than one per cent of the total demand for seeds by farmers can be supplied by these research stations. Nevertheless, some research findings on seeds and new seed types have already been extended to farmers covering such crops as maize, rice, cotton, soy bean, mung bean and green bean. With respect to the livestock and fisheries sectors, some breeding has been done at various experimental stations, but supplies are not yet adequate.

4.1.5 Capital

A shortage of capital has made it necessary for farmers to rely on credit from various sources. In 1972, non-institutional credit accounted for approximately 69 per cent of the total amount of agricultural credit. Of this amount, about 30 per cent that was used by farmers came from traders and local moneylenders. The remaining 70 per cent was obtained from relatives and neighbors. Recently, non-institutional credit has decreased considerably, compared with the 1963 rate when non-institutional credit accounted for about 95 per cent of the total agricultural credit extended. Meanwhile, interest rate had also decreased from the annual rate of 30 per

cent in 1962 to 25 per cent in 1972. However, this rate is still high, when compared with the interest rate of 12 per cent per annum charged by the Bank for Agriculture and Agricultural Credit (BAAC) for its loans.

During 1967-1975, an average of about 54 per cent of BAAC's loans was extended to paddy production. Thus far, agricultural credit cannot yet be expanded rapidly due to the collateral requirement on loans by credit institutions as guarantee against uncertainties in weather conditions and agricultural price fluctuations. This to a large extent has limited the access of poor farmers to agricultural credit. In addition, to be eligible for loans, the farmer has to be a member of a farmer's institution. However, as of 1974, there were only 1,041 cooperatives and 15 cooperative communities with a total number of 503,581 families, or only 13.3 per cent of the total farm families in the country.

4.1.6. Labour

In 1973, total agricultural labor force amounted to approximately 11.5 million persons, or about 75 per cent of the total labour force. The average annual rate of labour utilization in agriculture was only about 38 per cent of the total labour force. The utilization of agricultural labour is at its peak during the July-December period when employment of labour is about 72-77 per cent of the total labour force in comparison with the off-season period when only about 20 per cent of the total labour force is employed. Labour utilization is lowest in March when only 6 per cent of the total labour force is employed. The regional breakdown is as follows:- the annual average rate of labour utilization in the Central and Southern regions is about 50 per cent of the total labour force in the region, while the corresponding figure for the North and Northeast regions is about 32 per cent.

4.2 Policies

To increase productivity it will be necessary to use greater amounts of basic resources in agriculture such as land, water and labour. It is also important to try and extend research findings of Government research and experiment stations to as many farmers as possible. To achieve this, the linkage between research and extension services must be strengthened and existing extension services must be expanded. Within the areas designated for agricultural promotion, modern inputs, particularly seeds, fertilizers and credit will be increased to meet demand by farmers.

4.3 Strategies

4.3.1 Land. On land ownership, the Government will implement a land reform programme to give less fortunate people a better chance in life as mentioned in Chapter I of Part 3. With respect to the improvement of land for stimulating productivity increases, a target has been set for improving sulphate soil areas by 2 million rai in the Central region where appropriate technical know-how is already available. During the Fourth Plan, work will also begin on the improvement of 8 million rai of saline soil areas in the Northeast region in order to improve income distribution.

The rehabilitation of 1.24 million rai of mangrove swamps and 400,000 rai of saline soil area along the coastline will also be undertaken, depending on the availability of funds. For the Northeast region in particular, work on the preparation of the project for land improvement and integrated agricultural development in the Tung Kula Rong Hai Plain must be accelerated so that project implementation can start during the Fourth Plan period.

4.3.2 Water. An important measure in the Fourth Plan is the expansion of on-farm irrigation to cover an additional 2.7 million rai. The construction of irrigation facilities at the farm level however, involves considerable investment, ranging from 2,000, to 3,000 baht per rai. In order to create more social justice, part of the investment costs should be paid for by those who benefit from this project. It is believed that the development of irrigation at the farm level will not only contribute to better utilization of land within the area covered, but will also generate a substantial amount of employment. More intensified irrigated agriculture will require much more labour input and should help to absorb surplus labour supplies. As such, migration into areas for which integrated development is planned can contribute to productivity increases as well as more optimum utilization of surplus labour.

The problem of drought in certain parts of the Northeast will require immediate action during the Fourth Plan period. The Chee and Mun river basins in particular will be developed to increase the storage of water. Pumping irrigation, which has already been applied to various parts of the Northeast region will be further expanded. In addition, the pumping irrigation project in the Mekong Basin will be reviewed and the project area will be extended with the use of foreign financing and funds from the national budget.

The utilization of underground water for cultivation has been used in Sukothai province on an experimental basis. Evaluation of this project will be carried out so that this irrigation techniques can be applied elsewhere.

4.3.3 Agricultural Research

During the Third Plan period, agricultural research was directed mainly towards major crops. During the Fourth Plan, the cultivated land constraint will become more severe, so research activities will have to be directed towards other crop varieties which are short lived and can be planted and harvested within a relatively short period of time so that second and third crops can be planted. It will be necessary to select crops which do not require much water and those which can resist periods of drought. Research is also needed for selecting and developing crops which can be grown simultaneously with major crops without having adverse effects on the major crops. This would help to maximize land utilization on an year round basis and generate more employment. In addition, research will be undertaken to improve the productivity of sugar cane, tapioca and maize in which productivity has increased slowly.

4.3.4 Agricultural Extension

During the Third Plan period, agricultural extension services were provided to farmers living in intensified irrigated areas, and areas used for the acceleration of cotton growing only. In the latter half of the Third Plan, a farmer

volunteer system was introduced in intensified irrigated areas, areas where crop diseases were prevalent and various areas in Roi Et, Ubol Ratchthani and Yasothorn provinces. During the Fourth Plan, efforts will be made to correct the shortcomings in the provision of extension services, in particular, the lack of coordination among units working on soil analysis and conservation. In addition, a comprehensive system of agricultural extension services will be devised for effective implementation.

4.3.5 Agricultural Development Coordination

During the Fourth Plan period, the coordination of various activities relating to agricultural development will be improved. These activities include extension work, research, natural resources development and conservation, the study and research on production and marketing as well as the project formulation, implementation and progress evaluation at the local level. The four regional agricultural offices in the Central, Northern, Northeast and Southern regions will be given the responsibility of coordinating with and providing services to various government agencies in the field of agricultural development in each locality.

4.3.6 Seeds

Even though the supply of high-quality certified seeds is still inadequate, at present there is still no definite policy on the production and distribution of these seeds in non-irrigated areas. With financial assistance from the United States, the supply of high-quality seeds has been made available to farmers in land consolidation areas in the Pitsanuloke Project as well as in other areas. It is recognized that, in principle, the Agricultural Marketing Organization will, in future, be in charge of the administration and distribution of high-quality seeds. However, the scope of this project is still very limited. Hence, a definite policy on this matter must be formulated during the Fourth Plan so that the coverage of this project can be further expanded.

4.3.7 Credit

During the Fourth Plan, action must be taken to relieve the debt burden of farmers who used their land title deeds as collateral for obtaining loans and help must urgently be given to farmers who are about to lose their land to creditors. Data and information must be compiled and plans for assisting farmers during the Fourth Plan period must be drawn up. On this matter, it may be necessary to expand the scope of activities of the Bank for Agriculture and Agricultural Cooperatives or to establish a new agency for this purpose. Production credit will also be expanded by BAAC along with the improvement of its administrative capacity with particular emphasis on closer credit supervision in the same manner as adopted by the Rubber Replanting Aid Fund.

4.3.8 Other inputs

More detailed analysis of soil conditions in major agricultural development areas will be undertaken to serve as a basis for fertiliser application in terms of quantity and in terms of an appropriate formula.

5. Price Level

5.1 Present Situation

5.1.1 The domestic prices of the main agricultural commodities have fluctuated according to changes in world market conditions. However, the export prices of the eight principal crops increased considerably during the Third Plan period, by about 76 per cent. This has had the effect of raising the level of output of these crops. It must be noted though, that agricultural input costs have also increased. Nevertheless, it is believed that the sharp rise in prices have improved income distribution in favour of farmers through increases in their incomes after the deduction of production costs. During the past five years, the prices of such crops as sugar cane, tapioca and maize encouraged expansions in areas planted to these crops both in terms of encroachments into forest areas and in terms of substituting areas presently planted to other crops. For example, in many parts of the Central and Western regions, sugarcane is now being grown in place of paddy. Similarly, many parts of the Northeast region which was used for growing kenaf has now been replaced by cassava cultivation. These changes can be explained in terms of farmers shifting to the most profitable crops. More details are shown in table 2.1

Table 2.1

Farmers' Income From the Cultivation of Major Export Crops (1975)

Crops	Farm gate Price (Baht/ton)	Income (Baht/rai)	Production Cost (baht/rai)	Profit (Baht/rai)
1. Sugar-cane	288	2,308	1,756	552
2. Tapioca	420	992	543	449
3. Tobacco	1,350	2,095	1,800	295
4. Rubber	6,280	465	222	243
5. Soy Bean	3,600	512	274	238
6. Maize	2,020	755	560	195
7. Kenaf	3,000	415	345	70
8. Rice	2,095	752	701	51

5.1.2 Farmer institutions such as farmers' groups and cooperatives at present handle only 10 per cent of total market transactions, while marketing systems for farm products remain complex and middlemen still play a large role. In addition, the shortage of marketing machineries such as storage facilities and transport vehicles mean that farmer groups are in a weak bargaining position vis-a-vis the professional middlemen.

5.1.3 Until now, there was no pricing policy for farm products. During recent years, the Government has tried to keep the price of certain commodities down by using tax measures, export premiums, export restrictions, and anti-profiteering measures. During the latter half of the Third Plan period in 1974-1975, the Government had allocated 450 million baht to subsidize the floor price of sugar cane at 300 baht per ton. Minimum farm gate prices have also been set at 2,500 baht per ton. However, this has been implemented effectively only in a few areas. The implementation of the Government's price guarantee programme so far has been made difficult by the lack of an overall policy and specific programmes for action and problems relating to agricultural commodities pricing. The two major public enterprises responsible for agricultural marketing, namely, the Government Warehouse Organization and Farmer's Marketing Organization have experienced these problems. Moreover, the shortage of capital, manpower and storage facilities are also other factors which limit the effectiveness of these agencies.

5.2 Policies

If the above mentioned measures to promote more agricultural diversification and a higher level of productivity are implemented properly, the 5 per cent rate of increase in agricultural output can be achieved during the Fourth Plan period. In view of the estimated increase in population engaged in agriculture from 32.2 million in 1976 to 35.8 million in 1981, projected per capita output in real terms will increase at an annual rate of only 3 per cent from 3,450 baht in 1976 to 4,880 baht in 1981 which is lower than the projected national average increase of 4.7 per cent. Thus these two sets of measures relating to diversification and productivity are not sufficient for reducing the income gap among various income classes and a set of policies relating to prices is needed to raise the income level of 75 per cent of the population in the agricultural sector. However, the implementation of policy measures to regulate agricultural prices, especially the price guarantee or the price stabilization programme are very costly and create complicated administrative problems. Nevertheless, during the Fourth Plan, policy measures to regulate the prices of major crops such as paddy will be applied in order to raise the income of the majority of farmers who earn their living from paddy cultivation. In addition to paddy, the Government will also include other crops in the price support programme. Special emphasis will be given to crops produced in the most backward areas and to crops which need special attention such as cotton and kenaf. To stabilize agricultural prices in the long-run, a buffer stock scheme will have to be set up. This project should begin during the Fourth Plan.

5.3 Strategies and Measures

The main strategies and measures which should be used to regulate the prices of agricultural commodities during the period of the Fourth Plan include the following.—

5.3.1 Strategy on Paddy Pricing

General price level in the country during the Fourth Plan period is expected to rise at an annual average of 6 per cent. As a result of this, the price of

paddy will have to be raised accordingly. It is projected that by the end of the Fourth Plan, the farm-gate price of paddy will be raised to 2,750 baht from the average of 2,065 baht in 1976. To achieve this target for farm-gate price of paddy, efficiently price guarantee or price support programmes will have to be launched by the Government through the establishment of a buffer stock. Meanwhile, the Government will have to allow the price of rice to go up proportionally with paddy price.

5.3.2 Farmers' Groups

Urgent action will have to be undertaken to raise the administrative capacity of cooperatives to play a more active role in marketing. Major measures contemplated include the provision of technical and financial assistance to cooperatives so that they can have more flexibility in the recruitment and the payment of remunerations to their managers. In addition, guidelines will also be established for the development of existing types of farmers' organizations. At present, there are three main types of farmer's organizations, farmers' groups, groups of farmers who are customers of BAAC and agricultural cooperatives. Existing cooperatives will be strengthened and improved through the following measures:—

(1) The structure of cooperatives will be improved at all levels to suit present conditions. In the first stage, the Cooperatives Act of 1968 will be revised so that it really facilitates the development of cooperatives. Government officers who are specialists in this field will be provided to cooperatives to give advice on how to improve the operations. At the same time, training will be provided to cooperative officers to increase their management capabilities.

(2) Public and private credit to farmers will be channelled through farmers groups and agricultural cooperatives in order to encourage more farmers to join farmers organizations. Other government services to farmers will also be provided through farmer organizations to strengthen these institutions.

5.3.3 Buffer Stock

Due to the substantial amount of investment needed for the establishment of a buffer stock, at the beginning it will be limited to paddy and then extended to other crops such as rubber and maize. There is a need to speed up the construction of paddy storage facilities in rural areas and rice storage facilities in Bangkok in order to implement the buffer stock programme effectively.

5.3.4 Marketing Council

Marketing councils for certain crops and fruits can be established comprising farmers, government representatives and merchants.

6. Production Targets

In setting up production targets for agriculture, consideration must also been given to the important objective of conserving forest resources. With this in mind, the expansion of cultivated areas has been projected at an annual rate of 500,000 rai or 2.5 million rai during the next five years. During the Third Plan, the average annual rate of increase in cultivated areas was four million rai. With this limitation, the increase

in agricultural output during the Fourth Plan will depend largely on productivity increases, and more agricultural diversification as previously mentioned. Taking these strategies into consideration along with projected domestic and foreign demand for agricultural commodities, the more important production targets that have been set for the Fourth Plan can be summarized as follows. —

Table 2.2
Major Production Targets

	Unit	1976	1977	1981
Agriculture				
1. Crops				
1.1 Paddy	million tons	14.7	15.4	16.5
Wet Season	„	13.4	14.0	14.6
Dry Season	„	1.3	1.4	1.9
1.2 Rubber	Thousand tons	394.0	407.0	466.0
1.3 Sugarcane	million tons	20.3	21.9	28.6
1.4 Maize	„	2.5	3.5	3.8
1.5 Mungbean	Thousand tons	255.9	292.5	390.4
1.6 Cassava	million tons	9.2	9.8	10.8
1.7 Tobacco	Thousand tons	37.0	44.7	65.5
1.8 Cotton	„	60.7	63.0	205.0
1.9 Soybean	„	290.0	310.0	431.2
1.10 Kenaf	„	190.0	220.0	220.0
2. Livestock				
2.1 Cattle	Thousand heads	770	820	1,080
2.2 Water Buffaloes	„	334	336	415

The quantitative targets presented in table 2.2 have been derived from assumptions relating to expected changes in agricultural diversification and productivity during the Fourth Plan period. Production of dry-season paddy is projected to increase in accordance with the extension of dry-season irrigated areas. As such, paddy production in the Fourth Plan is estimated to increase at a higher rate than in the Third Plan. The output of four other major crops which were prominent in the Third Plan, namely, rubber, sugarcane, maize and cassava has been projected to increase at a lower rate during the Fourth Plan, as the output of other crops such as mung-beans, cotton, vegetables and fruits is expected to increase in line with the policy to increase agricultural diversification. The projected average annual rates of increase in output of major agricultural commodities are summarized in the table below.

Table 2.3

Average Annual Increase in Production of Major Agricultural Commodities

(at constant 1962 prices)

	1972-76	Target 1977-81
1. Crops	4.3	4.6
1.1 Rice	1.0	2.3
1.2 Rubber	3.7	3.4
1.3 Sugar Cane	27.6	7.2
1.4 Maize	14.2	9.8
1.5 Mung Bean	2.4	8.9
1.6 Tapioca	15.8	3.2
1.7 Tobacco (Virginia)	16.1	9.9
1.8 Cotton	6.4	28.6
1.9 Soy Bean	15.6	8.3
1.10 Kenaf	-9.3	3.3
1.11 Vegetables and Fruits	5.8	6.2
1.12 Others	3.6	4.5
2. Livestocks	7.1	8.9
2.1 Cattle and Buffaloes	1.4	6.2
2.2 Others	8.8	9.4
3. Fisheries	0.3	3.4
3.1 Fresh Water Fishing	9.6	6.0
3.2 Off-Shore Fishing	-1.8	2.5
4. Forestry	1.3	1.3
Total	3.9	5.0

7. Rural Development

The target rate of production increase of agricultural output of 5 per cent per annum is expected to be brought about mainly through increases in productivity as opposed to the past pattern of increases in agricultural output via the expansion of cultivated areas. In implementing this policy, additional investment for agricultural production in rural areas is needed along with the initiation and formulation of new projects. To this end, a comprehensive rural development approach

has to be adopted. Various government agencies involved in rural development work have to coordinate the timing of implementation of their respective development projects to ensure integrated development. Comprehensive programmes and projects have to be formulated. This means, for instance, the integration of occupational development programmes, price guarantee schemes and the provision of long-term and short-term credit for agriculture with projects aimed specifically at raising agricultural output. All these efforts must be provided as a package programme for specific areas. Various government agencies must also be restructured so that this integrated approach can be implemented successfully. The provision of financial and manpower resources for these activities is a pre-requisite for a successful rural development effort.

In addition to raising income levels in rural areas through the comprehensive development approach, the strengthening of farmer organizations is considered to be a vital component for developing agriculture in rural areas. Mutual assistance among farmers in repairing ditches and dikes and in paying the Government for some of the infrastructural facilities provided will help to speed up the expansion of intensified irrigated areas. Correct phasing of group formation must begin with the setting up of groups for price bargaining which can lead on to producer groups for trade and small-scale industries. This phasing is necessary for raising the income of farmers. Lastly, the cooperation of commercial banks in extending more credit to the agricultural sector than during the latter half of the Third Plan will also help to raise the income of the rural people.

CHAPTER III

INDUSTRIAL DEVELOPMENT

1. Introduction

During the First and the Second Plan, industrial investment expanded at a higher rate than the rate of investment in other sectors. Industrialization has been characterized by the growth of import substitution industries such as textiles, petroleum refining, automobile tyres, paper, iron rods, sweetened condensed milk, electric wires, sheet glass, automobile and motorcycle assembly together with a small number of primary processing industries including tin, wood products and cut jewelry. The growth of the above industries was the result of a favourable investment promotion policy which facilitated industrialization especially through incentives such as tax holidays and tax exemption privileges provided in the Investment Promotion Act and other measures for promoting foreign investment expansion.

The main problems facing this early stage of industrialization are the limited size of the domestic market as evidenced in existing price and income levels, small uneconomical scale of production, low productivity and over-dependency on imports of semi-finished components. What has been happening is that after the termination of tax incentives, many of these industries still need some form of protection such as import restrictions on high tariffs on competitive imports. Over production in certain industrial sectors and distortions in the market mechanism have adversely affected resource allocation. High cost production has imposed an unjust burden on consumers. Since 1969 there was a substantial change in development policy relating to import substitution industries with the termination of the special tax incentive on raw materials. At the same time, new industrial concerns moved into the production of semi-finished products. From a national view point, the most important problems of the current phase of industrialization include the dependence of many industries on imported raw materials in which prices and supply availability are subject to considerable external changes and the high-cost structures of many industries set up during the early phases of industrialization which even now cannot survive without a relatively high tariff wall to help protect the domestic market from outside competition. Moreover, the existing tax system still has to be revised to facilitate further industrialization.

In 1966, a number of export-oriented industries were established, but they are still few in number. Some agro-industries such as pineapple and food canning, which have the potential to become major export industries still face problems of supply shortages and sub-standard raw materials. Many import substitution industries such as cement, sugar, textiles and jute products have expanded productive capacities and can sell a significant proportion of their production in foreign markets. The absence of a definite development policy on export-oriented industries

is a main problems as sometimes, the Government imposed controls on exports and simultaneously applied domestic price controls. As a result, many factories during these periods were forced to operate at a loss. In the Third Plan (1972-1976), the Government made significant policy changes to promote the development of export industries by amending the Industrial Promotion Act so as to offer special tax privileges for raw materials and to extend the income tax exemption period to 8 years. However, export industries have not developed sufficiently due to problems over the provision of facilities such as free tax zones and industrial estates for export industries, the cumbersome tax refund procedures, the multiplicity of agencies that must be dealt with and the difficulties in obtaining promotion privileges stipulated in the Investment Promotion Act. Industrialization in the preceding period generated several problems and the most significant ones include the following:-

1.1 Industrial Structure

Measures to promote industrialization in the past did not sufficiently encourage the establishment of basic industries and neglected the objective of a more equitable income distribution. During the Fourth Plan, it will be necessary to improve and to correct this situation.

1.2 Developing Export-Oriented and Import-Substitution Industries

Several export industries have problems in selling their products in foreign markets mainly because of the protectionist policies of importing countries. At present, there are very few export promotion measures. Export policies are adjusted to deal with short-run constraints without due consideration to the impact of these policies on exports in the longer run. As for import substitution industries, higher priority is accorded to consumer goods industries at the expense of the production of semi-finished products and capital goods. Furthermore, the raw materials used in import substitution industries originate mainly from foreign rather than domestic sources. The relatively high tariff wall that is used to protect these industries also adversely affects domestic resource allocation.

1.3 Government Services for Promoting Industrialization

Government services to promote industrialization are not well coordinated and bureaucratic red tape has made many services too slow to be useful. Problems relating to industrial location, industrial development fund, technical training and management services to a considerable extents could be alleviated if government services to industry were more efficient and harmonized.

1.4 Industrial Cooperation in ASEAN Countries

Industrialization and investment strategies will incorporate the strategy of increasing opportunities for and cooperation in joint industrial projects with neighboring countries especially within ASEAN. Such a strategy will take into

consideration the appropriate scale of industry, comparative advantages and industrial specialization using domestic natural resources. This should help to re-orient the past pattern of industrialization which did not take this sufficiently into account.

1.5 Government Industrial Enterprises

During the preceding periods, the Governments did not have any definite policies on government enterprises. Some state enterprises could have been used to help stimulate industrial development, but no clear-cut policies were formulated to use such enterprises for this purpose nor for other purposes relating to various economic objectives and targets.

1.6 Government Organizational Structure and Industries

Several government agencies are responsible for supervising and for promoting industrial development. The problem at present is that there is a lack of coordination among the various activities of different agencies working in the field of industrial development. No single body has been set up to coordinate the operations of the relevant agencies in accordance with the overall industrialization policies and strategies that have been formulated.

1.7 Development of Specific Industries

Problems related to the development of specific industries may be classified in terms of problems specifically related to each industry which has its own basic characteristics and problems which are more or less common to various types of industries. The basic problems of each industry can be put under the following headings; production, marketing and government interference such as price control, the control on competition and the control on the use of domestic raw materials. Problems relating to a number of associated industries include such problems as inefficient horizontal and vertical linkages between related industries and the building up of basic industries for supporting other types of industries as well as government objectives such as employment creation, technology transfer and assistance for agricultural production.

1.8 Foreign Investment in Industrial Sectors

Foreign investment in the past concentrated on bringing foreign capital into the country without due regard to the strategy and the targets of the country's overall industrial development. Investment promotion policy for some industries had no clear-cut objectives. The cost-benefit analyses of investment projects are based on economic grounds only, thus neglecting political and social considerations, the impact on the environment, the transfer of technology, the long-term effects on the development of economic and industrial structure and definite stimulations on the types of industries that will be reserved for domestic investors only.

1.9 Development of Industrial Labour Force

One of the crucial problems that must be dealt with during the Fourth Plan is how best to develop the industrial labour force. Industrialization has generated a large number of jobs, but ineffective labour institutions and loopholes in the regulations concerning labour relations have created a number of labour problems. The labour problems which have resulted has had the effect of encouraging more capital-intensive industries, which in turn means that the industrial sector is creating less employment than it could if more labour-intensive production techniques had been adopted. Labour problems thus must be alleviated during the Fourth Plan as it is a crucial factor in determining the volume of investment in the industrial sector.

1.10 Tax System

The existing tax structure, in particular the high tariffs that protect domestic industries, creates considerable injustice between producers and consumers, between producers of different types of products and even among producers of the same types of goods. This is because the tax system tends to overprotect some types of industries without considering whether those industries would be efficient enough to stand on their own.

In order to achieve the main economic and social development targets, the industrial development plan of the Fourth Plan has to identify basic problems and present guidelines for solving these problems and for accelerating national industrial development in several areas. The long term problems will be covered in this chapter while the strategy to solve the short term problems are stipulated in Chapter I of Part II under the title of Acceleration of Economic Recovery in 1977-1978.

2. Industrial Structure

2.1 Current Situation

The industrialization policies during the First and the Second Plan periods accorded high priority to the development of import substitution industries. During the Third Plan, priority was shifted to export-oriented industries, which contributed to the growth of income in the industrial sector at a higher rate than those of other economic sectors such as agriculture and mining. During this period, the growth rate of manufacturing at constant prices was about 7 per cent per annum compared to 3 per cent and 1 per cent per annum for agriculture and mining respectively. At the same time, the share of income originating from the industrial sector increased from 17 per cent in the Second Development Plan period to 20 per cent in the Third Plan period. Furthermore, industrialization in the past has brought about an increase in industrial employment from 6 per cent to 16 per cent of total employment. In addition, the share of industrial products in total export earnings increased from 15 per cent in 1970 to 21 per cent in 1974.

Policies and strategies for promoting industrialization during the First and Second Plan periods had two major effects on the industrial structure of the country.

First, 60 per cent of the increased income in the industrial sector was contributed by the consumer goods industry of which about 90 per cent came from food, beverages, tobacco, textiles and clothing industries. The remaining 40 per cent of the increased income was generated by basic and supporting industries. The oil refining industry alone accounted for about a quarter of this increased income.

Secondly, the income derived from industrial development was concentrated in the Central region at the expense of other regions. In fact, 77 per cent of total income in the manufacturing sector originated in the Central region. Of this, the Bangkok Metropolis and its adjacent provinces accounted for about 57 per cent.

These two factors have not changed to any significant extent over time. Thus, it may be summarized that the industrial development strategy of the past has not encouraged changes nor fostered an industrial structure which could be the foundations for future industrialization.

2.2 Policies and Strategies

2.2.1 Policies

(1) The Government will encourage industrialization concurrently with agricultural development and give priority to basic industries, supporting industries and agro-industries.

(2) To supplement the policies and targets relating to income distribution, the Government will encourage the decentralization of industries from the Bangkok area to the outlying regions by accelerating the provision of various infrastructural facilities in those areas.

2.2.2 Strategies

(1) The Government will invest jointly with private concerns in basic industries vital to economic development and the national economy such as iron and steel, fertilizers, pulp and paper, large scale industries utilizing natural resources which the private sector is unable to carry out alone, industries with forward and backward linkages with other industries such as petroleum industry and labour intensive industries.

(2) The Government will encourage the establishment of agro-processing industries near the main sources of raw material which are located outside the Bangkok area by providing facilities, tax protection and various promotional privileges as well as accelerating the production of agricultural raw materials.

(3) The Government will give high priority to export oriented industries and less importance to the protection of and the granting of promotional privileges to import substitution consumer goods industries.

(4) The Government will encourage the development of small-scale industries which are important for generating employment. This will be done through the provision of credits, risk guarantees, the provision of investment opportunity, technological services and marketing services.

3. Development of Export-Oriented Industries and Import-Substitution Industries

3.1 Main Problems

Policies for promoting export-oriented industries were formulated in 1970 and specific measures to promote such exports were introduced in 1972. The main export promotion measures include the tax refund to producers for imported inputs used in the production of export goods, special promotional privileges according to the Investment Promotion Act such as the exemption of import tariffs and business taxes on machinery and other factors of production which are used in the production of export goods as well as other promotional privileges to reduce production costs such as preferential electricity rates. Furthermore, the Government also provides export credit through the Bank of Thailand and financial assistance through the Industrial Finance Corporation of Thailand.

One of the main obstacles to the expansion of Thai exports arises from the fact that many foreign countries and groups of countries which import products from Thailand such as the European Economic Community, Japan and the United States have set up tariff and non-tariff barriers to protect their domestic industries. In addition, many export promotion policies have not been effectively implemented due to the large number of government agencies responsible for enforcing regulations and laws concerning exports. Changes in government export policies to deal with immediate and short-run problems are often made without due consideration to long run implications for exporting. The existing tax structure favours import-substitution industries and in some cases has adverse effects on exports. The present policy of refunding tax paid on imported inputs of export products is not fair to exporters of similar products due to the method of calculation that has been adopted. Also, this measure does not benefit export industries as a whole as most export goods do not use imported inputs. Finally, long-term export credit is not readily available for Thai exporters.

During 1960-1972, import-substitution industries expanded considerably. Since 1960, the processed food, beverages, cigarettes, primary goods such as petroleum products, yarn, glassware and durable goods such as construction materials and cement were produced. After 1966, the import-substitution industries expanded in the areas of paint, automobile tyres and textiles. In promoting import substitution, the Government accorded high priority to consumer goods vis-a-vis primary goods, intermediate goods and capital goods with high import content. The Government provided a high level of protection for these industries by increasing tariffs on imported finished products and reducing import duties on raw materials. This distorted national resource allocation pattern was unfair to consumers since they had to purchase products at prices which were artificially inflated. In addition, this distortion inhibits competition which adversely affects both production efficiency and the stability of long-term industrial structure since the present high rates of protection encourage investors to invest in projects with quick returns on investments.

3.2 Policies and Strategies

3.2.1 Policies

(1) The Government will encourage and promote export-oriented industrial production both in volume and in types of industries through an overall revision of export promotion measures and efforts to find new markets for Thai exports.

(2) The Government will encourage and promote import-substitution industries especially intermediate industries, capital-goods industries and industries with high domestic raw material content.

3.2.2 Strategies

(1) Exports will be promoted through greater efforts on the marketing side and through financial assistance.

(2) Establishment of export processing zones at seaports and at commercial airports will be expedited.

(3) Revision of tax structure in order to assist import substitution of intermediate and capital goods.

(4) Revision of import substitution and export promotion measures so that they do not hinder the process of industrialization in any way.

4. Government Services

Government services to promote industrialization such as the construction of basic infrastructure, the mobilization of funds for industrial development, the provision of training in the field of technology and the organization of courses on modern management techniques to improve production efficiency are essential and must be carried out in conjunction with one another. In the past, the provision of these services were not as effective as they should be for various reasons. First, government services are not well co-ordinated and bureaucratic red tape is prevalent. Second, the role and scope of each government agency responsible for providing these services are very limited. Thus to increase the effectiveness of government services to promote industrial development, the Government must urgently formulate policies and implement measures to deal with these problems, especially in relation to industrial location and funds for industrial development.

4.1 Industrial Location

4.1.1 Main Problems

Industrialization in the past did not give sufficient attention to industrial development in areas outside Bangkok. The previous industrialization policy and strategy stressed the importance of import substitution and export-oriented industries. As a result, most of the industrialization took place in and around Bangkok, as

the economically most efficient location for import substitution and export oriented industries was near the only deep-sea port of Thailand which is in Bangkok. A large number of other industries were located in the Bangkok area also because Bangkok is the largest market in Thailand for industrial products. The concentration of factories in Bangkok then led to mass migration into the capital and the associated problems in the field of housing, environmental pollution, traffic congestion and disparities in income

The policy to disperse industries to regional areas began during the Third Plan when the Board of Investment granted promotional privileges to companies which set up factories in promoted zones in various provinces. This measure was not all that effective, as only a few industries were established in the provinces compared with the number established in Bangkok area. During the Third Plan, value added in manufacturing was generated mainly in the Central region, especially in Bangkok. During 1970-1974, manufacturing value added in the Central region accounted for 77 per cent of the national total. Bangkok and adjacent areas accounted for 57 per cent of the total value added in Thailand.

The ineffectiveness of the policy to decentralize industries from the Bangkok area can be attributed to many reasons. The most important reasons include the following:-

(1) Special privileges given by BOI to industries to locate in promotion zones in provincial areas were not attractive enough to induce investment in those areas.

(2) The Government could not provide basic facilities such as communications and transportation, electricity, water supply, sea ports and industrial estates in a short period of time.

(3) Since the Government still promotes industries in the Bangkok area, the privileges given to industries located in this area to an extent offset the privileges granted to industries located in the provinces and as a result the rate of return to industries located in the Bangkok area continued to be higher than in regional areas.

4.1.2 Policies and Strategies

(1) Policies. In order to decentralize industries to regional areas according to the set targets, the Government has to pursue the following policies:-

(a) The Government will promote the decentralization of industries from the Bangkok metropolitan area by applying privileges granted under the Investment Promotion Act in such a way as to increase the establishment of industries in provincial areas.

(b) The Government will give special importance to the establishment of industries in regional areas.

(2) Strategies. To attain these objectives, the Government has to implement the following measures:—

(a) No special privileges will be granted to industries in the Bangkok Metropolitan area.

(b) The Government will consider increasing the amount of promotional privileges granted to investors in provincial areas.

(c) The establishment of industrial estates in areas around the Bangkok Metropolis and in every region will be completed within the Fourth Plan period.

(d) The Government will provide sufficient facilities for industrial development in provincial areas.

(e) The Government will assist the industries in provincial areas by seeking to reduce their costs of production through lower transportation and electricity rates.

(f) The Government will provide financial assistance through the expansion of provincial credit services of the Industrial Finance Corporation of Thailand (IFCT) and the Small Industries Finance Office (SIFO). In addition, the Government will set up a special fund to finance industrial investors in regional areas.

4.2 Funds for Industrial Development

4.2.1 Current Situation

In general, there are two sources of credit for industrial investments, that is, domestic and foreign financial institutions. The domestic financial institutions which play an active role in granting credit for industrial development are the Industrial Finance Corporation of Thailand (IFCT), the Small Industries Finance Office (SIFO), the Bank of Thailand, commercial banks, insurance companies, consulting firms and private individuals.

In Thailand, the Industrial Finance Corporation of Thailand (IFCT) is the most important source of credit for industrial development because of its low interest rate (10%) for a loan of between 1 million to 50 million baht. During 1970–1973, loans granted by IFCT increased from 538 million baht to 1,692 million baht. In the past, IFCT granted loans for the food preservation, construction materials, animal feed, textiles and paper industries. It is evident that IFCT tried to promote and accord high priority to industries utilizing domestic raw materials with export potential. Recently, IFCT has become more commercialized, that is, it will grant loans to any industry with good prospects and stability.

The Small Industries Finance Office (SIFO) provides loans to small-scale industries with registered capital not exceeding 2 million baht. The SIFO

extends loans up to one million baht for individual borrowers at the interest rate of 9 per cent per year. The Bank of Thailand provides rediscounting facilities through commercial banks at 5 per cent and commercial banks must then charge their customers 7 per cent. These facilities of the central bank aim at promoting industrial development. During the initial phase, the rediscounting facility for industrial purposes was limited to the financing of purchases of factors of production to reduce production costs. Later, such credit was expanded to cover sales of industrial products. During 1969-73, this rediscounting facility was used mainly to subsidise such industries as the construction industry, textiles, tin and rubber. Credit was also granted to new industries such as food canning, animal feed and electrical appliances. In 1974, the scheme was revised so that credit could be provided to unspecified industries based on their contributions to national economic development and their linkages to other industries. In this new scheme, export-oriented industries were given high priority. Other financial institutions provided both long term and short term credit with differential loan terms depending on the risks of each individual project.

Although Thailand has many financial institutions to promote industrialization, their activities are still very limited. Although IFCT and the Bank of Thailand have expanded credit in this field, they still give priority to big projects. Credit for small-scale industries is very limited. SIFO has granted credit of not more than 30 million baht per year. One of the problems is that SIFO is organized as a part of the Ministry of Industry. As such, it could not play an active role like the IFCT and it could not borrow additional funds from domestic and foreign sources. SIFO has to depend on an annual allocation (approximately 50 million baht) from the national budget and operates in conjunction with Krung Thai Bank.

4.2.2 Policy and Strategy

(1) Policy: So that the industrial sector can expand and contribute significantly to the overall objectives and targets of the Fourth Plan, the Government will support credit expansion so that there is enough credit to meet industrial demand. High priority will be given to the channelling of funds into small-scale industries and rural-based industries.

(2) Strategy: To reach the above objectives, the Government will implement the following measures.

(a) All financial institutions will be requested to expand credit to industries, especially industries in rural areas.

(b) The SIFO will be reorganized and made independent from the Ministry of Industry and Krung Thai Bank so that it will be able to function efficiently in the same way as the IFCT. This change will be completed during the early part of Fourth Plan period.

5. Industrial Cooperation in ASEAN Countries

5.1 Current Situation

5.1.1 General Cooperation. The ASEAN countries which consist of the Republic of the Philippines, Malaysia, Indonesia, Singapore and Thailand have been engaged in trading relations for sometime and the volume of intergroup trade is rather high, but serious economic cooperation has not yet been achieved. Recently, there has been an upsurge in the interest in intergroup cooperation on two fronts:—

- (1) Cooperation in trade
- (2) Industrial cooperation

5.1.2 Characteristics and Structure of ASEAN Countries

The total population of ASEAN member countries is about 220 million or about 5.7 per cent of the world population. The ASEAN nations with the exception of Singapore have similar economic structures. They are basically agricultural economies. In addition, all ASEAN nations belong to the free enterprise economic system and they maintain open economies in the sense that foreign trade plays major role in their economic development. They have the same major trading partners in addition to their common positions of being raw material producers striving to increase the value-added of their primary products by attempting to process as much as possible before exporting (with the exception of Singapore). Based on these similarities, there is room for economic cooperation among the ASEAN nations and this is strengthened by the discovery of different economic resources. Recently, a trend towards closer cooperation due to the increasing specialization of ASEAN nations. The oil discoveries in Indonesia, minerals for producing fertilizers in the Philippines and Malaysia and rocksalt for producing soda ash in Thailand in addition to in industrial the strength of Singapore have all contributed to this trend towards closer cooperation among ASEAN member countries, especially in trade and industry. Industrial cooperation should generate benefits in several areas, such as:—

- (1) Member countries have the opportunity to increase the value added in their industrial products.
- (2) Member countries will benefit from the economies of scale due to a large regional market.
- (3) Benefits resulting from cost savings in transportation and infrastructural facilities.
- (4) Benefits generated by the adaptation and transfer of technology.
- (5) Benefits to be gained through increased bargaining power with other countries in relation to supplies of goods from outside the region.

5.2 Policies and Strategies

To fulfill the targets of economic cooperation especially with respect to industrial cooperation, the Government will set up the following policies and strategies:—

(1) Promotion of ASEAN economic cooperation through joint investment for industrialization concurrently with selective trade preferential treatment.

(2) A permanent agency will be set up to study the feasibility of inter-ASEAN cooperation in various areas covering those already agreed upon and those that will be agreed upon in future with special emphasis on trade and industrial cooperation.

6. Government Industrial Enterprises

6.1 Background

Government industrial enterprises were established in Thailand prior to 1960 at a time when the Thai Government started to become more aware of national planning and economic development. At that time, the Government considered that it was necessary to set up various industrial enterprises as an example for the private sector and thus encourage investment in the industrial sector. As time passed by, changes in the economic, social and political parameters occurred and state enterprises were set up not only as a pioneering project, but for other reasons such as to guarantee supplies of strategic commodities, for stabilizing the price of certain goods, for standardizing the quality of different products and as a source of government revenue. Most of the existing state enterprises are inefficient and are not capable of achieving the objectives for which they have been set up. These enterprises as a whole have expanded slowly. At present, their share of total value-added and total employment generation in the industrial sector amounts to only 4 and 1.5 per cent respectively. This is an indication of the limited role that they now play in the process of industrialization in Thailand. The inefficiency of these state enterprises is indicated by the rising cost per unit of production of most state enterprises and low rates of return on investment. Some of these state enterprises are making a loss, such as the Nonthaburi Gunny Bag Factory and the Bang Pa-in Pulp and Paper Factory. The state enterprises which have recorded satisfactory profit levels are mainly those which have a monopoly. Only a few other state enterprises such as government sugar milling have achieved a satisfactory rate of return on investment. The low production efficiency and the low rate of return inhibited the utilization of these enterprises as price stabilizers or sources of government revenue. The main problems underlying this present condition of the state enterprises can be listed as follows:—

6.1.1 Supervision Problem

The absence of operating flexibility and the slow decisions on investment and expenditure in comparison with private enterprises are results of too much

supervision by too many agencies, including the Ministry of Finance, the Budget Bureau and the National Economic and Social Development Board. Investment decision procedures are too cumbersome, involving various stages of considerations of many government agencies.

6.1.2 Management Problems

In many government industrial enterprises, the management team lacks experience and expertise in their respective areas of business. In addition, political interventions in the administration are prevalent, generating problems of overstaffing and high costs. The executives and the members of the Board of Directors of government industrial enterprises are generally appointed by the Government which selects officials from government agencies instead of recruiting people with knowledge and experience in relevant fields. (This problem has been discussed in topic number 7 of Chapter 5 in the Second Part)

Previous development plans stipulated broad policies concerning state enterprises. The First Plan formulated a strategy of limiting the expansion of some state enterprises in order not to compete with private enterprises. The policy in the Second Plan only related to the improvement in the level of efficiency of existing state enterprises and the reduction of the significance of government industrial enterprises by allowing private concerns to operate most of them. During the Third Plan, investment in state enterprises was cut back and the main policy was to dissolve or sell inefficient enterprises to private concerns. However, during the Third Plan period, no state enterprises were dissolved or sold since the stipulated policy was too broad and did not specify individual enterprises which should be dissolved or sold. In the Fourth Plan, the policies and work plan in this field will be clearer and more definite.

6.2 Policies and Strategies

6.2.1 Policies. To make government industrial enterprises contribute to the process of industrialization and to national economic development, the Government will revise the following policies :—

(1) The Government will continue to support monopolistic state enterprises only to control product quality, to stabilize prices and to generate government revenues. These state enterprises include the Thailand Tobacco Monopoly, the Government Distillery and the Pharmaceutical Organization.

(2) The Government will support state enterprises which are strategically necessary, such as enterprises producing explosives. As for enterprises producing such products as preserved foods, glass products, tanning products, batteries and textiles, the Government will seek only to maintain stocks of these products at a certain level for military use and either private or public companies will produce these products. The state enterprises producing these products will be dissolved or sold.

(3) The Government will consider the establishment of new government industrial enterprises which require :-

- (a) large budgetary investment on infrastructure.
- (b) large capital investment in which private enterprises are reluctant to invest on their own,
- (c) complex technology which cannot be provided solely by private enterprises, and
- (d) natural resources, where concessions for utilizing these resources must be obtained for production.

(4) The Government will close down or sell state enterprises which were originally established to introduce a new industry, and those which are now operating inefficiently. These types of enterprises can now be operated by the private sector.

(5) In sectors where the Government considers that both state enterprises and private companies can operate concurrently, the Government will apply the same measures to regulate the activities of both types of enterprises.

(6) The Government will take measures to improve the efficiency of state enterprises in the industrial sector as well as other types of state enterprises which will be allowed to continue operations. The Government will revise the laws and regulations which inhibit the freedom of action of state enterprises so as to enable them to operate efficiently. This will include the improvement of various regulations concerning the administration of state enterprises in order to create more freedom of action. At the same time, the responsibilities of the management and the Boards of Directors will be clearly stipulated. The Boards of Directors will be empowered with the right to impose penalties in case of management failures or damages.

6.2.2 Strategy and Corrective Measures. To ensure that the operations of state enterprises contribute significantly to overall economic and social development, the Government has formulated the following strategies and corrective measures:-

(1) The Government will study the objectives and the operations of both new and existing state industrial enterprises in order to identify those which should be promoted and those which should be dissolved or sold to private concerns. Procedures relating to the transfer of ownership, capital investment and government assistance that will be provided will be laid down in accordance with national policies.

(2) The Government will formulate operational and administrative planning. These plans will define the scope of operations of the responsible agencies,

the relevant budget, time and working location so that state enterprises can operate efficiently, effectively and economically. Definite procedures for controlling the investment of state enterprises will be laid down and greater freedom of action for state enterprises will be promoted.

(3) The Government will encourage cooperation and joint investment with the private sector in industries which are new to Thailand.

(4) Laws and regulations controlling state enterprises will be revised with the view to facilitating a greater degree of efficiency in the operations of such enterprises and to allow more operational flexibility. Government control of the operations of state enterprises should be retained.

The Third plan also laid down guidelines for ensuring that state enterprises followed government policy through similar studies and planning but it did not specify any particular agency to carry out the task. As a result, no systematic study or planning was carried out by any particular agency. The studies that were carried out aimed at solving immediate short term problems on an ad hoc basis. A "Government Organization Advisory Council" was set up by the Cabinet to look into some aspects of the operations of state enterprises, but this Council did not work continuously because it was appointed by the Cabinet and was dissolved whenever there was a change of government.

During the Fourth Plan, the Government will consider proposal to set up a permanent central agency to be responsible for reviewing the operations of all state enterprises. This agency will have wide ranging powers. It might not be necessary to set up a new agency, but authority should be vested with some agency which has the expertise to carry out such a task such as the Ministry of Finance, the Budget Bureau or the National Economic and Social Development Board. Such an agency should submit regular reports on state enterprises to the Cabinet.

7. Government Industrial Management

7.1 Background

Government efforts to regulate and promote industrial development are carried out by different agencies which act independently from one another and in accordance with their individual laws and regulations. The Ministry of Industry is responsible for policy matters, planning, investment promotion, protection, control and the provision of basic services to industry. The Ministry of Finance is responsible for the protection and promotion of industries. The Board of Investment performs the functions of promotion, protection, planning and policy formulation. The Ministry of Commerce concentrates on the marketing side and industrial protection. The Ministry of Public Health regulates the quality of goods and deals with sanitation aspects. There are many agencies carrying out overlapping tasks such as data collection. All aspects of industrialization must be considered concurrently and one single agency should be given full responsibility of coordinating all government administrative efforts in this field and to ensure that industrial development efforts are carried out in accordance with policies and guidelines for overall industrialization of the country.

7.2 Policy and Strategies

7.2.1 Policy The Government policy on this matter is to establish a special organization which will have the responsibility of supervising industrial development efforts.

7.2.2 Strategies

(1) Duties and responsibilities of all government organizations concerned with industrialization will be reviewed and clearly defined.

(a) The National Economic and Social Development Board will be responsible for planning and formulating industrial development plans and strategies. Long-term policy and planning should be coordinated and revised annually. This will be the responsibility of the NESDB working in coordination with the Ministry of Industry and the Board of Investment.

(b) A single agency will be vested with the responsibility of granting investment incentives and of regulating the level of domestic prices of products manufactured locally through such measures as tariff rate adjustments.

(c) Industrial services:—

(i) SIFO should be made an independent institution under a government agency so that it can expand its activities.

(ii) Research and technology should be completely under the responsibility of the Ministry of Industry.

(iii) The provision of infrastructural facilities should be coordinated by the Ministry of Industry.

(iv) Industrial information will be systematically collected and coordinated by the Information Centre of the Ministry of Industry which will be expanded in future.

(d) The Ministry of Industry will be responsible for regulating and registering factories and supervising various industrial operations in accordance with stipulated regulations, environmental control guidelines and quality control standards. Products for domestic consumption in particular must be subject to strict quality control.

(2) Law relating to industrialization will be revised and made consistent with the functions and responsibilities of agencies outlined above.

(3) An organization to be directly responsible for industrialization will be established.

8. Development of Specific Industries

8.1 Current Situation

In the preceding Plan periods, the development of specific industries to support the growth and development of the economy was hindered not only by the basic problems outlined above, but by crucial problems within each individual industry. Such problems include those relating to raw materials, quality and standard of products, price and export control, competition in foreign markets and the lack of planning to coordinate production and exports.

8.1.1 Raw Materials. The development of agro-based industries was hindered by the problem of fluctuations in the supply of raw materials resulting from variations in agricultural output due to uncertainties in climatic conditions. In addition, the Government's policy is still uncertain with respect to the setting up of export targets in accordance with production and raw material requirements of domestic industries. Industries encountering serious raw material constraint include the food canning industry and industries which use natural resources such as iron ore, rock salt, potash and phosphate in which deposits have been located, but uncertainties regarding available reserves still exist.

Industries with a high import content such as the production of plastics, fertilisers, certain types of textiles and oil refining are faced with the problem of rising import prices.

8.1.2 Quality of Manufactured Goods. Most domestically produced manufactured goods are characterised by low and irregular quality. This adversely affected the demand for domestic industrial products.

8.1.3 Controls

(1) Price Control. At present, price controls are imposed on many industrial goods to protect consumers and to check price fluctuations resulting from critical shortages. These controls to some extent limit price adjustments with changes in the cost of production. However, after the crisis has subsided, the Government does not lift these price controls to allow prices to be readjusted. This adversely affects the expansion of investment and production in industries such as sweetened condensed milk, paper and cement.

(2) Control of Factory Expansion and New Factory Establishment

The Government has no definite policy in approving the expansion of factories or the setting up of new factories. Several types of industries experiencing excess capacity have been allowed to expand or to build new factories. This has had a destabilizing effect on the development of industries such as textiles and metal products.

8.1.4 Foreign Markets. Foreign markets for manufactured goods are very limited. The Government has not adequately assisted in opening up new markets or in advertising Thai manufactured goods. Sometimes, the implementation of export control policy has resulted in the loss of traditional markets. Furthermore, in export industries where there are many producers, price-cutting competition among producers has been prevalent as there is no unified group of sellers to bargain with.

8.2 Policies and Strategies

8.2.1 Policies. The Government will urgently solve the existing problems of each individual industry and will promote new industries to contribute to the process of industrialization and the overall economic development objectives.

8.2.2 Strategies

(1) The Government will accelerate and assist projects to produce raw materials for agro-industries. Natural resources will be surveyed to ascertain the extent of their deposits and the amount of reserves that will be available. The Government will also promote investment in basic industries producing raw materials such as petroleum and pulp industries. Information and data services will be provided on existing production capacity, domestic consumption and export potential.

(2) Quality and standards for each type of industrial product will be urgently stipulated and inspection of quality and standard will be done, strictly in accordance with the law.

(3) Prices will not be controlled but will be determined by market conditions. If it is necessary to control prices, the controlled prices have to be in line with production cost plus an equitable profit for producers. The principle of price control will be to prevent "excessive" profits.

(4) The expansion of plants and the establishment of new factories will take into account the existing production capacity and market conditions. Laws will be strictly enforced and the Factory Act will be revised to help solve the problems mentioned above.

(5) Foreign markets will be expanded, for instance, through advertisement of manufactured goods, and sending trade missions to open up new markets; negotiations will be carried out to reduce tax barriers, quota system or import ban of various countries.

CHAPTER IV

FOREIGN TRADE AND TOURISM DEVELOPMENT

1. Introduction

Thailand's trade deficit has been increasing over time. During the First Plan period, the trade deficit averaged about 2,367 million baht per annum. This average deficit per year during the Second Plan increased to about 10,288 million baht or about four times the size of the deficit during the First Plan. During the Third Plan period, the average annual trade deficit increased to 14,200 million baht. Consequently, one of the main objectives of the Fourth Plan is to increase export earnings and simultaneously check the rate of increase in imports.

During the Fourth Plan, exports in nominal terms are projected to increase at an annual rate of 14 per cent while imports are projected to increase at an annual rate of 11.5 per cent. The attainment of these Plan targets will help to strengthen Thailand's overall balance of payments position over the Plan period. To achieve these targets, emphasis will have to be given to the expansion of agricultural and industrial production. Imports also have to be kept at a reasonable level so that foreign exchange can be saved for economic development purposes.

2. Policies

In the Fourth Plan considerable emphasis will be given to the improvement of the balance of trade position. As such, export earnings will have to expand at a higher rate than import payments. Policies which will be adopted include the following :-

2.1 Efforts to promote exports should aim at increasing export volume, finding new markets and in developing new export commodities. At the same time, every effort should be made to maintain and strengthen existing market outlets. A definite export development plan will be formulated. Production inputs will be developed so that export potential can be realised. In addition, basic facilities and export incentives will be provided. New export markets will be developed through the harmonisation of production and marketing activities and between public and private sectors.

2.2 An import-substitution plan will be formulated so that the pattern of development contributes even more to national economic development with a minimum of foreign-exchange cost. Import-substitution industries will also help to strengthen the domestic-production structure increase Thai bargaining power in trade negotiations with foreign countries and help solve the trade deficit problem.

2.3 Commercial services and facilities provided by the Government will be improved through such measures as reviewing the organizational set up and management of the agencies involved. Agencies responsible for export promotion and

international trade negotiations will be created. In addition, research on commodities and markets, the diffusion of information on production and efforts to improve product standardization will be strengthened to help producers and exporters.

2.4 The Government will improve international economic cooperation among groups of countries which have a common interest in a particular commodity or a number of commodities as well as groups of countries within the same region and member countries of the United Nations. Particular emphasis will be put on the promotion of cooperation among ASEAN countries.

3. Exports

3.1 Problems

Major export problems which must be tackled include the following :—

3.1.1 Agricultural output cannot be adjusted in accordance with demand in foreign markets due to variations in climatic conditions and the fact that the prices of agricultural commodities in the preceeding year to a considerable extent influence this year's cultivation pattern. As such, changes in world demand for various agricultural commodities, coupled with time lag adjustments in the supply of these commodities have resulted in demand-supply imbalances and subsequent commodity price fluctuations. So far, measures such as the creation of buffer stocks and the procurement and price guarantee for selected crops have not been adopted to help stabilize fluctuations in commodity prices. Without commodity market restructuring, farmers will have to continue to suffer as in the past, from price fluctuations. As a result of imbalances between domestic output and foreign demand, the Government has had to impose export controls to prevent domestic shortages and to check domestic inflation. These measures, unfortunately, may adversely affect exports in future as traditional overseas customers are forced to seek new sources of supplies during periods of export control.

3.1.2 The development of basic infrastructural facilities for promoting exports has not been impressive so far. Though major facilities such as deep sea ports and export processing zones have been given high priority status, actual implementation has been slow. The necessary marketing information and services provided by Thai commercial attaches stationed in foreign countries are still very limited. In addition, no financial institution has been established to serve exporters. These problems have contributed to the high cost of exporting and have made Thai products less competitive in foreign markets.

3.1.3 The provision of export incentives in the form of tax concessions and rebates is still very limited and ineffectively organized. In applying for a refund on tax paid on imports of materials used as inputs in the production of export products, exporters have to encounter considerable bureaucratic red-tape and cumbersome procedures. Moreover, the existing tax system is not adequately geared towards the promotion of exports. Deduction of marketing expenses for instance, has not been provided in the calculation of income tax. There is also a limited amount of long term credit available for exporters.

3.1.4 So far, research on marketing has been conducted on a very limited scale. This is attributed to the lack of data and cooperation from exporters in supplying necessary information. It is recognized that the collection of data and information is particularly essential for production and investment planning of agricultural exports in which prices fluctuate violently. In addition, export expansion into new markets also depends very much on effective marketing research and an efficient information system.

3.1.5 The lack of standardization has also created frequent problems on the export of low quality products. This problem is not only attributed to the system of inspection and licensing but also to the lack of quality standardization. The existing system of inspection and licensing is complicated without any one agency fully responsible for quality control and standardization. Work in this field is currently being carried out by such bodies as the Products Standardization Office, Industrial Products Standardization Office, working group on standardization of the Thailand Board of Trade and the work on quality control as carried out by private companies. Work in this field thus has not been done very effectively.

3.1.6 Bureaucratic red tape is one of the main obstacles in exporting. Cumbersome procedures increase the cost of exporting for exporters in terms of time and money. This is particularly so in cases where export products are subject to rules and regulations enforced by many agencies. The lack of effective coordination among these agencies has caused considerable delays for exporters who must get official approval on various aspects of exporting.

3.2 Export Targets

The target for an increase in the value of exports at an annual rate of 14 per cent during the Fourth Plan period, is based on the following assumptions:—

(1) World economic conditions will follow the normal trend of the recent past.

(2) Actual exports to each foreign country in the past, import trends of the same products of competitors and trends in demand and productive capacity in importing countries have all been taken into consideration. In addition, allowances have been made for the expansion of exports into new markets for some commodities, as well as the trade restrictions imposed by foreign countries on certain products.

Table 4.1

Targets for Principal Exports during 1977-1981

Unit: Thousand Tons.

Commodities	1977	1978	1979	1980	1981
Agricultural Products					
1. Agricultural Products which earn considerable foreign exchange					
1.1 Paddy	1,500	1,550	1,600	1,650	1,700
1.2 Maize	2,500	2,600	2,800	3,000	3,200
1.3 Rubber	390	400	420	430	450
1.4 Tapioca Products	3,400	3,500	3,550	3,580	3,600
2. Agricultural Products with good Export Prospects					
2.1 Tobacco	25	30	36	42	48
2.2 Frozen Shrimp	17	19	22	25	28
2.3 Frozen Squid	22	24	26	30	34
2.4 Orchid (million bunches)	42	50	58	66	74
2.5 Black Matpe Bean	50	56	62	70	78
2.6 Fresh Fruits	45	50	56	62	70
2.7 Eggs	3.5	3.9	4.2	4.6	5
3. Other Agricultural Products	200	220	250	270	300
3.1 Sorghum	200	220	250	270	300
3.2 Soy Bean	27	29	31	33	36
3.3 Mung Bean	45	46	47	49	52
3.4 Other Beans	14	15	16	17	19
3.5 Cattle (Thousand heads)	35	38	40	43	45
3.6 Water Buffaloes (Thousand heads)	15	16	17	18	20
3.7 Sesame	11	12	13	14	15
3.8 Castor Bean	32	34	35	38	40
3.9 Seed lac and sticklac	8	8.5	9	9.5	10
3.10 Kapok Fibre	21	22	23	25	27
3.11 Dried Tamarine	20	21	22	23	25

Commodities	1977	1978	1979	1980	1981
Industrial Products					
1. Industrial Exports					
1.1 Canned Pineapple	50	55	60	65	70
1.2 Electronic Equipment (million units)	80	100	150	180	230
1.3 Garments	4,500	5,300	6,000	6,700	7,500
1.4 Watch Case and Parts (Thousand units)	460	540	610	680	750
1.5 Canned Fruit Juice	3.5	3.9	4.2	4.5	5
1.6 Furniture (Thousand units)	350	450	600	700	800
1.7 Leather Gloves (million pairs)	5.4	6.5	7.8	8.9	10
2. Industrial Products in which domestic output exceeds Domestic Demand					
2.1 Sugar	1,150	1,120	1,250	1,300	1,400
2.2 Molasse	740	760	790	820	850
2.3 Canned Fruits and Vegetables	1.5	1.7	2.0	2.2	2.5
2.4 Cement	900	950	1,000	1,100	1,200
2.5 Cotton yarn (tons)	300	320	350	380	400
2.6 Synthetics (tons)	4,000	4,300	4,500	4,800	5,000
2.7 Cotton Cloth (million square yards)	120	130	140	160	180
2.8 Synthetic Cloth (million square yards)	160	177	194	215	240
2.9 Kenaf Products	70	76	84	90	98
2.10 Radio (Thousand Sets)	90	100	110	130	150
2.11 Sanitary Ware Product (tons)	900	950	1,000	1,050	1,100
2.12 Pharmaceutical Product (million baht)	120	125	130	140	150

Commodities	1977	1978	1979	1980	1981
3. Cottage Industry Products					
3.1 Carved Wood	4	5	6	7	8
3.2 Thai Silk (Thousand Square Yards)	350	400	450	500	550
3.3 Gems and Pearls	1,115	1,250	1,350	1,450	1,555
3.4 Utensils made from wood	12	15	18	20	25
3.5 Bronze ware (tons)	280	295	300	310	320
3.6 Furniture (thousand units)	300	350	400	500	600
Minerals					
1. Tin (Metal)	22	23	24	25	26
2. Fluorite	285	282	280	280	280
3. Barite	140	160	180	200	224
4. Tungsten	4.0	4.5	5.0	5.5	6
5. Manganese	25	25.5	26	27	28
6. Antimony	6	6.4	6.9	7.5	8

3.2.1 Targets for Agricultural Exports

These targets are classified into 3 main groups namely:—

(1) Products with Substantial Export Earnings. Export expansion of these products is influenced especially by the following conditions:—

(a) In promoting exports, due consideration must be given to domestic consumption. Rice and maize in particular must be considered in this light. Export quantities will depend very much on the amount of surplus over domestic consumption at a reasonable price during the Plan period. To this end, Fourth Plan measures will include the provision of reserve stocks for exports to maintain uninterrupted supplies to regular customers and long term credit for exporting to certain foreign customers. Definite and clear-cut policies will be formulated on various aspects of exporting such as taxes, premiums and the exporting system, such as whether export controls will be imposed or not.

(b) New market outlets have to be found and traditional overseas markets must be maintained. New markets for rice will be found in the Middle East and in African countries. For maize, tapioca products and rubber, new markets can be developed in Socialist countries, in Eastern Europe and in Asia. Various incentives will have to be devised to encourage exporters to look for new markets.

(2) Products with Favourable Demand and Export

Potential. There are seven products in this category, each with different export problems. For commodities such as tobacco, frozen shrimp, frozen squid and black matpe mung bean, output must be increased as the problem is on the supply side. For commodities such as fresh orchid, fresh vegetables and eggs, the problem is that each commodity is being exported on an individual basis and so there is no collective bargaining power. Hence, exporters and/or producers of these commodities should be encouraged to form associations or marketing boards during the Fourth Plan period. Moreover, due to the nature of certain commodities which cannot be kept for a long period of time, special allowances have to be given to the revision of rules and regulations on customs clearance and transportation system.

(3) Other Agricultural Products. There are commodities in which potential export earnings and demand in foreign markets are substantial. These commodities face different exporting problems. The output of kapok fibre, castor bean, sesame, dried tamarine and seedlac has not expanded very much over time and the Government has not given enough encouragement to producers of these products despite the fact that these products are in great demand in foreign countries. As for cattle and water buffaloes, government measures at present are not adequate for promoting production and exports.

3.2.2 Industrial Products can be classified into 3 main groups of commodities, namely:—

(1) Industrial Products Manufactured Specifically for

Exporting. At least seven major commodities fall under this category, including garments, electronic equipment, furniture and leather gloves. To stimulate exports of these products, certain problems must be tackled, including the following:—

(a) Improvements must be made on several fronts, including product advertisement, trade negotiations and the preparation of better programmes and projects for promoting exports.

(b) The shortage of raw materials and the imposition of import tariffs on raw materials which are required for production purposes increase the production cost of electronic equipment, leather gloves, garments and canned pineapple. To stimulate the production and export of these commodities, special export processing zones for industrial products have to be established.

(2) Industrial Products in which Domestic Supply Exceeds

Domestic Demand. At last twelve commodities fall under this category, some of which have become principal exports such as sugar, kenaf products, textiles and cement. In promoting exports of these commodities, the policy on domestic price control has to be revised in conjunction with active market expansion measures. In addition, negotiation with foreign purchasers have to be made to reduce trade limitation measures and restrictions imposed on Thailand's major export commodities such as textiles, kenaf products, pharmaceutical products and sugar.

(3) Cottage Industry Products. As these products are the result of the work of craftsmen and are uniquely Thai, it is believed that these products have good export potential. If production of these goods can be increased, further market expansion can be expected in the United States, the Common Market countries, Eastern European countries and Japan. Nevertheless, improvement in packing still has to be made to reduce damages during shipment, particularly for carved wood, bronzeware and utensils made from wood. For precious stones and pearls, import taxes levied on uncut raw materials should be abolished in view of the increase in value of these exports.

3.2.3 Mineral Ore. As the amount of mineral ore reserves is not known, the export target for minerals is set at a level which is not lower than the quantity exported in the past. To achieve this export target, the Government must actively promote investment in the mining sector so that the level of mineral production can be raised to the level required.

3.3 Strategies and Measures

To deal with these problems on export promotion, the Government will have to adopt the following strategies and measures in order to achieve the above mentioned targets.

3.3.1 The Government will set up machinery for export promotion planning which will consist of representatives from the exporters' organization or association, representatives from various government agencies and producers of agricultural and industrial export commodities. In addition, the work of the Commerce Ministry and other government agencies involved with export promotion, trade negotiation and the management and provision of advisory services on exporting will be streamlined. Agencies involved with export promotion will be encouraged to work more closely together to study and analyse changes in the economic situation and to set annual production and export targets consistent with projected foreign demand for various commodities. The machinery to be created will also be responsible for accelerating export development projects so that export targets can be achieved.

3.3.2 Closer coordination of international trade activities of various agencies such as the Ministry of Commerce, the Ministry of Finance and the Ministry of Foreign Affairs will be encouraged so that the Ministry of Foreign Affairs can make diplomatic manoeuvres to increase Thailand's bargaining position, help find new markets for Thai products and negotiate for more trade preferences.

3.3.3 Buffer stocks of certain commodities will be established so that the Government can intervene in the market to stabilize domestic prices which in turn will encourage more production. In addition, stocks of particular commodities can help stabilize supplies of certain commodities for export so that traditional markets can be maintained. Thai exporters can thus conclude sale agreements on particular commodities in substantial quantities and on a long-term basis with more confidence. Apart from the buffer stock scheme, the Government will have to

regulate more effectively the existing distribution system in the private sector in order to stabilize prices. At the same time, the Government will have to monitor developments in the international political scene more closely so that possible changes in the demand for Thai export products due to international political changes can be known in advance.

3.3.4 Support will be given to the provision of basic infrastructural projects which are necessary for promoting export. These projects include the following:-

(1) The commercial marine fleet will be strengthened through the setting up of a committee of exporters who send their goods by ship and the establishment of a centre for reserving godown facilities. In addition, air and land transport facilities will be improved. The Government will also consider the expansion of existing deep sea ports or the construction of a new port, particularly for handling the export business.

(2) A telecommunications system will be set up to improve information flows between export promotion agencies in the country and Thai commercial attaches stationed abroad. This should help improve Thailand's international competitiveness.

(3) An export processing zone or industrial factory will be established for producing export of goods which must use substantial amounts of imported raw materials in order to avoid complications in the calculation of tax rebates. Most of the goods produced will be high quality goods which generate substantial value added.

(4) The Bank of Thailand and various commercial banks provide credit facilities for some producers and exporters at relatively low rates of interest, for example, through the rediscounting facility. Nevertheless, consideration should be given to the setting up of an export-import bank to extend services to include longer term credit for exporters.

3.3.5 In promoting exports, definite and clearcut programmes must be formulated by relevant government agencies in conjunction with the private sector. Guidelines for coordinating public and private efforts in this field include the following:-

(1) Research work will be strengthened so that data on consumption, production and surplus which can be exported are available for export planning along with information on trade restrictions in various countries as well as the extent of foreign competition in various commodities. These studies should be useful to both exporters and producers.

(2) The export promotion activities of the Ministry of Commerce should be reorganized in the following ways:-

(a) Activities relating to trade missions to explore new markets, public relations, trade information and the arrangement of trade fairs will be brought together under one operating unit or agency.

(b) Work on marketing information, the provision of advisory services on export procedures and on the utilization of special tax privileges for exporters should also be integrated under one unit.

(3) The establishment of a large-scale export corporation by the private sector will be encouraged to increase the capability of Thai exporters to expand into new markets and to export more industrial goods that are produced domestically. Special privileges will be provided by the Government to this type of private corporation. In addition, the Government may also participate in the undertaking through equity sharing.

(4) As for the export of agricultural products, the Government will support institution building initiatives, whether it concerns the setting up of an association, a cooperative, a marketing board or a corporation in which the Government and the private sector jointly hold shares. This support also extends to farmers groups, producers cooperatives and distributors cooperatives. It is believed that the building up of such groupings can help to increase the bargaining power of Thai producers and exporters vis-a-vis foreign competitors and buyers in addition to raising the status of Thai exporters and generating more confidence overseas in Thai exporting capability. Domestic producers stand to benefit as well from such actions.

(5) Improvements will be made in the system for inspecting the quality of export products. Up to now, work on the inspection of the quality of export products for which standards have to be stipulated still need a clear-cut assignment of responsibilities between the public and the private sector. In future, the inspection of the quality of export products will be undertaken at the origin which should help to make export quality control more effective for both agricultural and industrial exports.

(6) The Government will improve the marketing capabilities of officials working in the field of export promotion so that Thai exports can have a better chance to penetrate into new markets.

3.3.6 The Government will build up a system of incentives for encouraging exports in general and selected commodities in particular. The export incentives that can be provided include the following:-

(1) Fiscal incentives will be initiated and improved through revisions of various taxes on production, sales income, exports (including export premiums) and imports. Fiscal incentives will be built into the tax system in order to improve the competitive position of Thai commodities in foreign markets. Exporters will be encouraged to take initiatives to penetrate new markets. This can be done, for example, by allowing exporters to make deductions in their income tax returns based on expenses incurred in developing new export markets. Also, tax discounts can be given to exporters who find new markets and conclude sales agreements involving a significant amount of foreign exchange.

(2) On financial incentives, long term loans with low interest rates will be provided to producers of export goods and exporters. In addition, export credit insurance will also be initiated.

(3) Incentives will also be provided for developing new export products and for improving, the quality of export products to increase their competitiveness in foreign markets. These incentives include the provision of financial assistance to research workers on product quality on design and packing, and other aspects.

3.3.7 International cooperation among countries in the same region, among countries producing the same commodities or between producing countries and importing countries will be promoted. Such cooperation will be aimed at the arrangement of international trade agreements on particular commodities to stabilize prices, the establishment of international buffer stocks of major export commodities at regional, sub-regional and interregional levels as well as the formulation of common measures for the expansion of production and marketing. This matter will require closer coordination among various government agencies concerned. The Ministry of Foreign Affairs in particular will have to play an active role in conducting foreign economic relations and international trade negotiations.

4. Imports

Thailand has had a trade balance deficit for quite some time. To improve this balance of trade position, most of the emphasis has been put on export promotion, while measures to deal with imports have, by and large, been neglected. Measures that have been applied to influence imports so far as a whole have been associated with the policy to provide protection for domestic industries during their initial development period. Import policies have not been used specifically for alleviating balance of trade and payments problems. Not only that, but import regulation measures have not yet been used as a bargaining tool for promoting exports.

4.1 Import Targets

Although the aforementioned strategies and measures for promoting exports will contribute to the expansion of agricultural, industrial and mining outputs in accordance with the set targets, it is believed that the promotion of exports is not the only way to alleviate balance of trade or balance of payments deficits. Attention must be given to the import side as well. As such, during the Fourth Plan period, a target rate of increase in import value has been stipulated. To keep Thailand's balance of payments figures within a reasonable range, the rate of increase in import value should not exceed 11.5 per cent per annum during the Fourth Plan period. Details on this are shown below:—

Table 4.2
Proportions of Import Targets (At Market Prices)

Import Classifications	1977	1978	1979	1980	1981	Average Annual Growth
1. Consumer Goods	12.2	11.8	11.5	11.2	10.7	5.7
2. Raw Materials for the Production of Consumer Goods	18.9	17.2	15.8	14.4	13.8	9.0
3. Fuel and Lubricant	20.7	21.6	22.3	23.0	23.6	14.0
4. Capital goods and Raw Materials for Investments	48.2	49.4	50.4	51.4	51.9	12.7
Total	100	100	100	100	100	11.5

4.2 Strategies and Measures

The following strategies and measures will be adopted for achieving the import targets of the Fourth Plan that have been set.

4.2.1 In promoting import substitution, the Government will use measures to stimulate output of agricultural commodities such as cotton and tobacco which can to an extent replace imports of these raw materials. At the same time, import substitution industries which use more indigenous inputs will be given special promotional status. The development of these types of industries can help to change the import structure which is heavily dependent on importing raw materials.

4.2.2 An international trade bargaining system will be built up, by reviewing fiscal and commercial measures such as customs duties, quotas, import licensing and the registration of importers which can be used to improve Thailand's international trade system. A direct bargaining system requiring a foreign country to import a certain quantity of Thai products in relation to the value of goods it exports to Thailand should also be considered.

4.2.3 Consumers of various import products should be encouraged to get together to set up groups such as a farmers' group which would handle import orders of group members as a whole so that these consumers can increase their bargaining power vis-a-vis foreign suppliers. Import price per unit could be reduced through this approach.

4.2.4 An agency responsible for import planning should be set up in the Ministry of Commerce. This agency would have to work closely with the Bank of Thailand, the Ministry of Finance, the National Economic and Social Development

Board, the Board of Investment, the Ministry of Industry and the private sector in formulating an operational import plan which could be enforced during emergency periods.

4.2.5 Closer cooperations with countries in the same region particularly ASEAN countries will be promoted so that negotiations can be made collectively with trading partner countries to maximize gains from trade.

4.2.6 The shipment of imports by Thai ocean liners will be expanded to save foreign exchange. To this end, the Thai Marine Fleet will be promoted along with the encouragement of import insurance with Thai insurance companies.

5. Promotion of Tourism

During the Third Plan period, the number of tourists entering Thailand increased at an annual average of 17 per cent. This rate of increase was, however, lower than the rate of 22 per cent per annum during the Second Plan due to depressed world economic situation and domestic unrest. Nevertheless, the number of tourists who came to Thailand during the Third Plan period averaged one million persons per annum. This was the third highest average among all Asian countries during this period. Moreover, foreign exchange earnings from tourism amounted to about four billion baht per annum. This made tourism the fourth largest foreign exchange earner for Thailand during this period.

5.1 Policies

The promotion of tourism during the Fourth Plan will be guided by the policy objective of increasing foreign exchange earnings to help reduce deficits in the balance of trade and payments.

5.2 Problem

The main problems which have to be dealt with to develop the tourist industry include the following;—

5.2.1 Problems Relating to the Development of Tourist Attractions

(1) Existing tourist attractions such as Pattaya Beach resort and the floating market at Wat Tri have become less attractive over time as the Government has not effectively developed these locations. Moreover, measures to preserve culture, nature and environmental conditions have not been adopted.

(2) Even now, the Government has not provided effective planning nor definite guidelines for developing new tourist attractions, not even locations such as Phuket where the private sector has already shown interest. The Government must act to prevent over-congestion and the deterioration of environmental conditions at these potential tourist attraction locations otherwise they will deteriorate in the same way as some of the existing tourist areas have deteriorated.

(3) Many tourist places do not have adequate facilities and services. For instance, Haad Yai, a major tourist centre in South Thailand has an airport which can only be used by small planes. Malaysian airways is one international airline which has flights to Haad Yai. In most tourist areas, water supply, drainage and town planning are still inadequate or ineffective.

5.2.2 Problems Relating to Quality Control and the Regulation of Companies in the Tourist Sector

Despite worldwide recognition that hotel services in Thailand are among the world's best, problems relating to other aspects of tourism still have to be dealt with. These problems relate to hotel management, tour companies, gift shops and guides. The lack of a definite development plan for the tourist industry has given rise to cut throat competition which in some cases has produced poor quality services. No government agency has been directly responsible for the supervision of these activities. The Tourist Organization of Thailand does not have sufficient authority to regulate and control the tourist industry. At present, there is no organization which can provide effective control over the tourist industry.

5.2.3 Problems Relating to the Upgrading of Manpower in the Tourist Industry

So far, the supply of high level manpower in the hotel business still lags behind the demand created by the rapid expansion of the tourist industry. Most of the skills in hotel management have been developed from working experience and on-the-job training of people who graduate from various fields of education. Although curricula on tourism and hotel management are offered in certain educational institutions, this training is limited to hotel service workers. There is no institution which offers professional training in the field of hotel management. The expansion of the hotel business thus far has given rise to intense competition in the bidding for professional hotel officers.

5.2.4 Problems Relating to Security for Tourist

(1) In choosing destinations, security considerations received top priority among the tourists. On this security question, it is evident that the problem of political unrest in neighbouring countries is beyond the control of the Thai Government. Nevertheless, there have been complaints about the lack of security measures for protecting lives and property of tourists while in Thailand. On the other hand, news on the lack of safety in Thailand have, in certain instances, been dramatized which discourage tourists from coming to Thailand despite the fact that tourists are safer in Thailand than in many other countries.

(2) The existing procedures relating to the filing of complaints and the taking of legal action are time consuming. As foreign tourists usually stay for a very limited number of days in the country, legal action is often not taken as tourists usually do not have the time to get involved in the legal action process. As such, those who rob tourists are usually not penalized in this respect.

5.2.5 Problems Relating to the Establishment of an Agency Responsible for National Tourism Development

As a state enterprise, the Tourist Organization of Thailand (TOT) has to depend on the Government's budget for financing its operations. As such, its capacity is very limited in relation to its scope of work and future programme for developing the tourist industry. So far, TOT has concentrated on the promotion of tourism through advertising. It has no authority to regulate and control the tourist industry. Whenever problems arise, TOT has no legal base for taking corrective action. Moreover, since it is not an agency directly responsible for the tourist industry, it has not received full cooperation from other government agencies and the private sector.

5.3 Targets

Taking the problems and policies listed above into account, the target for the increase in the number of foreign tourists during the Fourth Plan period has been set at an annual average of 11 per cent or from 1.4 million persons in 1977 to 2.2 million persons in 1981. The average duration of stay in Thailand of each tourist is projected to increase from 4.9 days to 5.5 days and average expenditure per person is projected to increase at an annual rate of 5 per cent from 800 baht to 966 baht. Based on these projections, it is estimated that income from tourism will increase by an average annual rate of 19 per cent from 5,500 million baht to 11,700 million baht.

5.4 Strategies and Measures

5.4.1 Promotion of Tourism

(1) Advertising campaigns to attract more tourists from abroad will be stepped up both in countries and territories where Thailand is already a popular tourist destination and in new countries and territories which have the potential to be important suppliers of tourists to Thailand such as Hong Kong, Singapore and France.

(2) Advertising campaigns will also be conducted to encourage the organization of more international conferences in Thailand. On this matter, facilities and large-sized conference halls will be provided.

(3) More emphasis will also be given to the promotion of domestic tourism.

5.4.2 Development of Various Locations as Tourist Areas

(1) Priority will be given to the development of existing and new tourist locations. Tourist development zones will be designated and each zone will have a major tourist centre as well as secondary centres so that sightseeing tours can be arranged in each zone without too much difficulty.

(2) Development planning for each major tourist area will be carried out. These development plans will incorporate details on land use, environmental protection, town planning, control of building plans, private investment and the provision of basic infrastructural facilities. These specific plans will be formulated for Pattaya, Phuket and Haad Yai-Songkhla in accordance with regional and urban development plans. Preliminary spatial surveys will be carried out in various other areas as well so that priorities can be set for further detailed development planning.

(3) A programme of action will be formulated to ensure consistency in the implementation of a tourist attraction development plan with developments in other related fields. To this end, a special agency will be set up to implement the tourist attraction development plan and to coordinate operations with provincial administrative organizations which will formulate a development plan for each province.

(4) Participation of local people in the development of tourism will be encouraged. The Government will invest in basic facilities, encourage the revival of local cultural art and tradition and stimulate the production of local commodities so that the benefits of tourism are spread out more evenly. In addition, the Government will encourage the establishment of a tourist promotion association or institution in each region or locality to coordinate the promotion of tourist activities with Government agencies.

5.5 Regulating the Tourist Industry

5.5.1 The agency responsible for the promotion of tourism will be improved to provide effective control over the tourist business and to implement tourist development programmes effectively. To this end, T.O.T. should be transformed from a state enterprise into a government organization and given sufficient authority to carry out its responsibilities in accordance with the new terms of reference. A Tourism Development Corporation should also be established to develop basic facilities for the tourist industry.

5.5.2 To ensure effective regulation of the tourist business, specific laws on tourism will be legislated, such as the law on the control and management of the hotel industry, tour companies, guides, transport business, gift shops, etc.

5.5.3 The Government will encourage the formation of groups in the private sector to provide more flexibility and closer coordination with government agencies. This is necessary for getting all parties to move in the same direction and in harmony with the overall policy for developing tourism.

5.6 Upgrading Manpower in the Tourist Industry

Manpower in the tourist industry includes those directly and indirectly involved in tourism. People who work in the hotel industry and guides are those directly involved in the provision of services to tourists. At present there are about 22,200 persons employed in the hotel industry. It is estimated that during the Fourth Plan, an additional 11,000 persons will be employed in this sector in Bangkok and other provinces. Planning for manpower development will have to take this into account. In addition to formal training in various institutions which concentrate more on the theoretical side, a school for hotel management to provide practical training at various levels will be established to enroll students from various institutions so that qualified manpower can be produced to meet present and future demand for hotel staff in Bangkok and in provincial areas.

CHAPTER V

DECENTRALIZED URBANIZATION STRATEGY AND THE IMPROVEMENT OF BANGKOK METROPOLIS

1. Introduction

The Fourth Plan has, for the first time, come up with a definite decentralized urbanization strategy to support the overall national redistribution objectives and development programmes for various lagging regions and their rural peripheries. In order to plan for better human settlement patterns to accommodate future population growth, and to bring about significant changes in regional production structures as well as to effectively decentralize administrative power, a regional urban strategy as well as the improvement of Bangkok Metropolis have been formulated with two important underlying objectives, namely:—

1.1 Urban growth outside the Bangkok metropolitan region must be encouraged. This is to be achieved by developing regional urban centres outside Bangkok to stem the flow of migration into Bangkok and to slow down the urban growth of the Bangkok metropolitan areas.

1.2 The growth of Bangkok metropolitan areas should be limited at some appropriate level so as to check urban congestion and improve the existing environment.

2. Problems

The past socio-economic growth patterns and population growth have aggravated several problems concerning national urban system and the Bangkok Metropolis as follows:—

2.1 The Growth Pattern of Urban System

The slow and uneven growth of urban communities have contributed significantly to interregional economic disparities.

2.1.1 The Low Level of Urbanization

Only 15 per cent of the total population live in urban areas and only three cities have more than 100,000 inhabitants. It is only in the Central Region that urban dwellers account for more than 30 per cent of the total population of the region. In the North, the Northeast, and the South about 70-80 per cent of the inhabitants still live in rural areas. During the past decade, the ratio between urban and rural inhabitants has remained almost the same. This indicates the low level of urbanization.

2.1.2 The Uneven Growth of Urbanization

In the past, the urbanization process was concentrated mostly in the Bangkok metropolitan area. In 1960, about 52 per cent of all urban dwellers lived in Bangkok. At present, about 60 per cent of the urban dwellers or more than

4 million persons live in the Bangkok metropolitan area compared to the total number of urban dwellers of about 7 million persons. The remaining two million urban dwellers live in 118 other municipalities. This indicates the uneven growth of urban areas.

2.1.3 The Dominance of Bangkok Primacy

At present, the Bangkok Metropolis is more than 46 times larger than Chiangmai, the second largest urban centre. The primacy of Bangkok appears to be increasing. The concentration of population, economic activities and the administrative systems in the Bangkok metropolitan area have impeded the distribution of growth to regions outside Bangkok. Furthermore, the increasing congestion in the Bangkok metropolitan area has created serious urban management problems for Bangkok and the availability as well as distribution of essential public utility services.

2.1.4 The Increasing Rate of Migration into Bangkok

The pull effect of Bangkok in terms of employment opportunities and higher wages in the industrial and services sectors has resulted in a flow of migrants from rural areas especially from the Northeast, the North, and the upper part of the Central Region into the Bangkok metropolitan area at a higher rate than the intraregional migration rate. So far, urban areas in regions outside Bangkok have not been able to create sufficient economic and employment opportunities.

2.2 Growth and Congestion in the Bangkok Metropolitan Area

At present, the Bangkok Metropolis ranks among the world's fifteen largest and congested cities in terms of its economic position and population size. Bangkok is really the only centre of growth in Thailand. It is the centre of public administration, military installation and commercial activities, and is the location of main industries and public utilities. The economic pull of Bangkok is so great that the cities and regions outside Bangkok may be considered as its satellites. The Bangkok metropolitan area has about 10 per cent of total national population, accounts for about 29 per cent of national production and income and about 50 per cent of the Central Region's production. Bangkok's production and income is about two times larger than that of the whole Northeastern Region. The growth of the Bangkok metropolitan area has created congestion and environmental problems and has caused scarcity and deterioration of all kinds of urban infrastructure facilities and services.

2.2.1 The Population Density of the Bangkok Metropolis is about 2,370 persons per square kilometre. The average population density of the Central Region, for comparison, is about 77 persons per square kilometre. The population of the

Bangkok Metropolis has increased at a rate of 4.8 per cent per year, or about 200,000 persons per annum, which is higher than the national average. This high rate of population growth in Bangkok is caused by the positive birth-mortality ratio and massive migration from other regions. High population growth causes problems in housing supply, traffic system and the availability of public facilities and services which could not keep up with the growth of the Bangkok Metropolis. Even the maintenance of the existing system is problematic. These problems are aggravated by the rigidity and inefficiency of the urban administration of the Bangkok Metropolis during the past two decades. The accumulated burden has been largely responsible for the present management crisis in the Metropolis. Given the existing rate of population growth, and the continued expansion of Bangkok at this rate, by 1985, there will be about 6.3 million inhabitants in the Bangkok metropolitan area.

2.3 The Lack of Definite Urban Development Policies, Insufficient Budgetary Support, the Absence of a Systematic Urban Development Plan, and the Lack of Rural-Urban Development Linkages in the Past National Plans.

2.3.1 The Lack of Definite Urban Development Strategy and Planning for Most Urban Centres and Bangkok Metropolitan Area

Short-term development efforts in the past were merely attempts to solve immediate urban problems. Nevertheless, urban services could not be expanded at a rate commensurate with population growth and expansion of socio-economic activities in most urban areas and in the Metropolis. Moreover, fiscal constraints limited the expansion and the improvement of urban infrastructure facilities in most municipalities and the Bangkok Metropolis since the tax base and tax collection capabilities of local governments were low and had to depend on subsidies and transfers from the central government. In addition, local government power to borrow from domestic and foreign financial sources for financing urban infrastructure development was very limited.

2.3.2 The Lack of Urban Planning Capability and Coordination of Urban Infrastructure Development Programmes

The national agencies responsible for city planning and urban infrastructure development programmes such as communications and transportation systems, urban public facilities to link urban development with suburban areas and between urban centres did not work closely together. Also, the concept that rural-urban

development must be linked to one another and related to regional development has yet to be studied and analysed for future planning purposes.

City planning which is an integral part of the development of urban systems still has not been effectively implemented as stated in City Planning Act, which was enacted at the beginning of 1975. This Act needs to be amended and improved on several issues. The coordination between city physical planning and urban systems planning as well as the metropolitan planning is needed at various government levels.

3. The Urban and Metropolitan Development Strategies

The development strategy for the Bangkok Metropolis and other urban areas during the Fourth Plan will concentrate on the decentralization of growth from the Bangkok metropolitan area by developing urban centres in other regions outside Bangkok to help check the flow of migration into Bangkok and as regional centres for generating growth to surrounding rural peripheries. At the same time, congestion in the Bangkok metropolitan area will be alleviated by the following strategies and measures :—

3.1 Decentralized Urban Development Strategies

3.1.1 The Development of Regional Urban Growth Centres Outside Bangkok will be Accelerated to upgrade various potential centres into medium-sized cities (population between 100,000–300,000) and the following provinces have been selected as the first generation of regional urban centres :—

(1) The urban growth centres of the Northeast region include Khon Kaen, Udon Thani, Nakhon Ratchasima, and Ubon Ratchathani.

(2) The urban growth centres of the Northern region are Chiangmai in the upper North and Phitsanulok in Lower North respectively.

(3) The urban growth centres of the Southern region are Songkhla-Hat Yai in the eastern coast and Phuket for the western coast of the peninsula respectively.

(4) Chonburi has been selected as the urban growth centre for the Eastern region.

3.1.2 Regional Urban Centres Outside Bangkok will be developed to reduce the congestion in the Bangkok metropolitan area and to distribute prosperity to regions outside Bangkok. To attain this objective, the following strategies and measures will be undertaken :—

(1) Policy and Measures Relating to the Control of Urban Land-Use will emphasize the formulation of a land-use plan for areas on the outskirts of Bangkok, an overall city plan and plans for specific areas.

(2) Policies and Measures Relating to the Urban Infrastructural Development will emphasize the public utility services, education, health, and housing sectors in particular.

(3) Urban Employment Creation Policy. In order to develop cities in regions outside Bangkok into viable urban growth centres, economic activities to provide jobs to urban dwellers are essential. Thus, it will be necessary to develop and decentralize industries to these regional urban centres. At the same time, other economic and commercial activities must be developed in these growth centres as well. To attain these objectives, the Government will use fiscal and monetary incentives to attract industry, commerce, and other services to these regional urban centres. In addition, the Government will establish industrial estates and export processing zones in these centres.

(4) Policies and measures will be designed to integrate the rural-urban development complementarity in the regional context. The development of urban growth centres alone may not succeed since the centres have to depend on other towns and rural peripheries. Thus, the Government will accelerate regional and rural development planning concurrently in order to serve as sources of raw materials and marketing outlets for the urban products.

3.2 The Development Strategy for the Bangkok Metropolis

In developing the Bangkok metropolitan area, it is necessary to accelerate the expansion of public facilities to meet the needs of the present and future urban population growth in Bangkok and, at the same time, to formulate measures to check the rate of migration into Bangkok. Thus, the main strategies and measures for the improvement of the Bangkok Metropolis are as follows:—

3.2.1 A Master Plan for Developing the Bangkok Metropolitan Area Covering the 1977-1981 Period will be formulated so that it is consistent with the period covered by the Fourth National Economic and Social Development Plan. This city plan will incorporate definite development targets and a priority list of work programmes and development projects for the Bangkok metropolitan area. This plan will also cover main public utilities, traffic and transportation land-use and environmental improvement as well as fiscal aspects. The organizational structure and operational performance of the Bangkok Metropolitan Administration will also be improved.

3.2.2 Strategies to Slow Down the Growth Rate of the Bangkok Metropolis

(1) Policies and measures to encourage the establishment of industries in provincial areas will be formulated and applied. The establishment and expansion of certain types of industries will be prohibited in specified areas to channel industrial investment away from the Bangkok area. In addition, the Government will grant special incentives for the establishment of new industries in provincial areas.

(2) An urban development plan for various communities in the suburbs and on the outskirts of Bangkok will be formulated in accordance with the poly-centric development concept. Each centre in this concept will maintain its self-sufficient socio-economic activities including infrastructural services and other public facilities.

(3) The major public facilities, like port facilities, will be contained and geared to serve Bangkok only, rather than the whole nation. International deep-sea port will be constructed elsewhere to help alleviate the congestion of Bangkok. This project will be implemented during the Fourth Plan period.

(4) Offices of government agencies and their activities will be decentralized from the Bangkok area, including educational institutions, hospitals and defense activities.

(5) Measure to check the flow of migrants into Bangkok will be applied such as the imposition of taxes on certain services to limit their expansion in the Bangkok area.

3.2.3 The Development Programmes for Improving the Bangkok Metropolitan Area

(1) The urban transportation network within the Bangkok area will be developed so as to create favourable conditions for the establishment of a mass transit system. Measures to limit the use of private cars in areas with the most serious traffic congestion problems will be made. The Government will also encourage private investment in parking facilities.

(2) The Government will encourage agencies responsible for providing public utilities and public facilities in the Bangkok metropolitan area to jointly formulate plans and operations to increase efficiency and reduce economic waste.

(3) Greater efforts will be made to improve the environment of Bangkok, especially through the improvement of slum areas and the garbage disposal

system, the cleansing of domestic wastes and polluted water, the protection of the quality of air, the control of the noise level, the maintenance of cleanliness and order as well as the conservation of urban places or items with special value in the thirteen zones of the Bangkok metropolitan area.

(4) Some parts of Nonthaburi and Samut Prakan will be incorporated into the metropolitan development area and a plan coordination committee will be set up to formulate a land-use plan, a city plan and the design of major public facilities projects for the capital.

(5) The administrative structure of the Bangkok Municipal Authority will be made more flexible. More power should be given to municipal authorities with respect to management, tax collection, land appropriation, and control over construction projects. Existing regulations, laws and administrative structures will be amended so as to give the Bangkok Metropolitan Administration more autonomy.

The strategy for the decentralization and the development of urban growth centres in regions outside Bangkok and the improvement of the Bangkok Metropolitan Administration is only one aspect of the development work. These strategies must be coordinated with other national development strategies, especially those relating to regional and community development, industrial decentralization, population distribution and social and economic infrastructure programmes.

CHAPTER VI

DECENTRALIZATION OF BASIC INFRASTRUCTURE

1. Problems Relating to the Provision of Public Infrastructure

The implementation of the national economic and social development plans for the past 15 years has been geared towards investments for the reconstruction and development of infrastructural facilities. Basic infrastructure can be classified into two main categories; namely the community infrastructure such as roads, water supply, sewerage and drainage facilities and the economic infrastructure to support production, exports and income distribution to various regions and rural communities.

During the Third Plan period, the Government will give less emphasis to the construction of large infrastructural projects and concentrate more on strengthening and completing existing projects to increase the benefits that can be obtained from the existing infrastructure. Emphasis in the Fourth Plan will also be placed on the decentralization of infrastructural facilities to people in rural areas. The problems involved in decentralizing infrastructural facilities are as follows:-

1.1 Shortage of Community Infrastructure

1.1.1 Problems in Rural Areas. The major problems are:

(1) Shortage of Potable Water Supply:

The water supply schemes for villages and sanitary districts are still inadequate, in particular, in the central and southern parts of the Northeastern region. According to a recent survey, it has been found that the village water supply service can provide potable water to only 40 per cent of all villages in the whole kingdom or approximately 13.7 million people.

(2) Requirements for Rural Roads

During the Fourth Plan, it will be necessary to concentrate on the construction of a network of rural roads: both inter-rural roads as well as roads for linking rural areas with towns. Rural feeder roads and village access roads will also have to be built.

(3) Demand for Electricity

The provincial electricity distribution system at present covers 68 provinces with a total population of 33.9 million. However, electricity service in these areas are provided mainly to those living in towns and larger communities, or about 22 per cent of the total population in these 68 provinces.

1.1.2 Problems in Urban Areas. Most of the major towns still lack a master plan for developing public utilities, in particular, water supply, a drainage and sewerage system, a traffic system and urban housing in conjunction with urban growth.

1.1.3 Problems in the Bangkok Metropolitan Area. Bangkok, the country's capital and primate city has expanded rapidly and without any town planning. As such, the land use pattern in the Bangkok metropolitan area that has evolved is far from being an optimal one. This in turn has increased the cost of expanding public utility services and is one of the reasons why such facilities could not be provided in accordance with the master plan. As a result, the supply of public utilities has lagged well behind the rapid increase in demand for such facilities. This is evident in many ways, such as:—

(1) The limited road network has resulted in heavy traffic congestion in Bangkok and this problem is becoming more severe each day.

(2) Sewerage and drainage facilities cannot be provided in accordance with the master plan. This, in conjunction with the lack of proper maintenance has brought about a situation in which the authorities have to spend a large amount of funds to repair damages due to flooding each rainy season. As for water supply, the Metropolitan Waterworks Authority can only serve 50 per cent of the total population of Bangkok.

(3) There is a housing shortage of 110,000 units for the low and middle income groups. Moreover, there has been a tremendous increase in the size of slum areas and the number of squatter settlements. From a recent survey, there are about 300 slum areas with 133,000 households for 800,000 persons. This is equivalent to 20 per cent of the total population in the Bangkok Metropolitan area.

1.2 The Interrelationship between Economic Infrastructure and Development

1.2.1 International Trade. At present, the handling facilities at the main international commercial port of Thailand are out of date and inefficient. To help promote external trade, it will be necessary to develop various facilities, including the following

(1) Deep Sea Port. The use of the international commercial port at Klong Toey, located on the Chao Phraya River at Bangkok is limited by the shallowness of the navigable channels and insufficient area for vessel operation. At present, only ships with a total tonnage not exceeding 14,000 DWT can use this port. Occasionally, incoming cargo has to be transferred from the larger ships to smaller vessels which then transport the cargo to the port. This increases the cost for imported goods. On the export side, this procedure, particularly for bulky agricultural products, results in higher transportation costs which in turn reduces the competitiveness of Thailand's exports.

(2) Merchant Marine and Shipping Lines. The present commercial fleet is relatively small in size, with a total loading capacity of approximately 98,000 DWT. Operations are limited to short shipping routes, e.g., Thailand-Japan and Thailand-Singapore.

1.2.2 Production and Marketing. The existing communication and transportation network is not consistent with production and marketing objectives. As a result, producers and traders have not received as much convenience as they should. This has had the effect of hindering production to some extent and the high cost of transportation inflates the price of various products. For example,

(1) The existing highway network consists of roads of various standards constructed by several agencies for different purposes. As a result, it is difficult to keep roads in good condition and standardization of different types of roads is hard to achieve. At present, these roads are not fully utilized. One of the problems is that feeder roads and roads linking highways with major production areas are lacking. These smaller roads must be constructed to stimulate agricultural production, especially maize, sugar cane, rubber and cassava and to reduce transportation costs.

(2) Inland waterways, especially the Pasak and Chao Phraya rivers south of Nakorn Sawan, are major transport arteries which pass through rich agricultural areas where rice, maize and sorghum are grown. However, the main problems which make inland waterways inconvenient at times include the shallowness of certain stretches of the river due to insufficient amount of water released from reservoirs and the existence of barrages along the river. As for coastal shipping, main problems include the shallowness of navigable channels, an absence of plans for developing coastal ports in line with demand for such facilities and a lack of equipment for dredging and maintaining navigation channels in good condition.

1.3 The Need to Develop the Infrastructure in Regional Growth Centres

The strategy to develop major urban areas in different parts of the country in order to create a viable economic base in each region means that special emphasis must be given to the establishment of infrastructural facilities for the following cities:-

1.3.1 Chiangmai An urban growth pole and tourist centre of the Northern region still lacks a commercial airport with facilities for accommodating international carriers. In addition, there is yet no master plan for developing public utilities such as water supply, drainage and sewerage system, an urban road network, public housing and a communications system. Town planning and land use plans for Chiangmai are also lacking. As such, a master plan covering the aforementioned items should be prepared as soon as possible.

1.3.2 Songkhla - Haadyai These twin cities are major commercial and tourist centres of the Southern region which should be developed into an important export centre for the main products of the South such as rubber, minerals and fish products. The main development problems of Songkhla-Haadyai relate to the improvement of town planning, the imposition of land use controls, the expansion of the public utility system and the development of port facilities.

1.3.3 Phuket In addition to the general problems listed for Songkhla and Haadyai, Phuket has some specific problems relating to the development of water

resources, sewerage and drainage system, transportation and communications. All these problems have to be dealt with to establish Phuket as the major growth centre of the west coast of the Southern peninsula for various activities such as offshore drilling in the Andaman Sea and agriculture development in the central lowland areas of Surathani Province.

1.4 The Management of Basic Public Services

During the past 15 years, several agencies have been established to provide public utilities such as those relating to the supply of potable water to urban and rural areas and the construction of feeder roads and rural roads. Investment programmes of these agencies are not well coordinated and this often results in unnecessary duplication and wastages. With respect to the maintenance of basic infrastructural facilities that the Government has already provided, a number of factors are responsible for the inefficient performance so far, including equipment limitations and insufficient funds of agencies at the community level for carrying out this job.

In addition, certain problems have arisen in cases where the relationship and division of responsibilities between government operating agencies and agencies which are responsible for supervising the running of various public works.

1.5 Pricing Policy. So far, the pricing policies of agencies responsible for providing public utilities and services have not been consistent with the development objectives relating to the encouragement of private investment, the decentralization of industries from the Bangkok area and income distribution.

1.6 Coordination of Various Transportation Systems. During the past decade, the Government invested a considerable amount of money in the communications and transportation sector. However, due to the lack of an overall plan for this sector, the development of roads, railways and waterways has not been well coordinated. Competition between different modes of transport have resulted in unnecessary wastage and the cheapest means of transporting people and goods have not been chosen in all cases. Owing to the increasing price of oil and fuel, it is necessary to coordinate the development of all modes of transport in order to develop a new transportation system which offers maximum net economic benefits.

2. Guidelines and Measures for the Allocation of Basic Infrastructural Facilities

The guidelines and measures that will be used for allocating basic infrastructural facilities during the Fourth Plan have been derived from the problems that have been identified and listed above. These principal guidelines and measures include the following:-

2.1 Decentralization of Community Infrastructure

2.1.1 Rural Areas

(1) The strategy of building up infrastructural facilities in rural areas should emphasize the provision of potable water to rural communities, the construction of rural roads and feeder roads to link production areas with villages and the distribution of electricity to rural communities in accordance with the overall development plan for each specific area. The building up of the community infrastructure in rural areas will also have to support the main occupation of the people in each particular area.

(2) Community development planning will have to be strengthened so that the allocation of infrastructural facilities to rural areas is done in accordance with the basic objectives and strategies that have been adopted. At the same time, the central government will have to provide technical assistance to develop the capabilities of local administration so that these institutions can operate and control community facilities such as local sanitary works.

(3) Local government finance will have to be developed. The central government may have to provide additional funds to local government units and/or give local authorities more control over local tax collection and use of tax revenue to a greater extent so that these local authorities have more funds for development purposes.

2.1.2 Urban Areas

(1) City planning must be improved and plans for expanding public infrastructural facilities in major urban areas in each region must be formulated. This is necessary for achieving the objectives of creating growth poles for accelerating economic and social development in provincial areas and for preventing the type of urban problems that have developed in Bangkok.

(2) Potable water supplies will have to be provided for communities in provincial areas in increasing amounts. This can be done through reorganizing the agencies responsible for this service on the administrative and planning side as well as on construction and maintenance of facilities provided. For urban areas outside Bangkok, the Government should urgently study the proposal for setting up a Provincial Waterworks Authority. For smaller communities, further studies should be made into ways of improving the operating efficiency of the agencies responsible for providing potable water supplies for these communities. Work programmes should be formulated and targets should be set for each phase of the programme for providing supplies of potable water for as many villages as possible during the Fourth Plan period.

2.1.3 In Bangkok

(1) To comply with the master plan for the development of Bangkok, city planning must be improved and controls on land use must be made more effective.

The provision of infrastructural facilities and services, particularly electricity and telephone services, will have to be better coordinated. Special consideration has to be given to investment problems, operational efficiency and the formulation of a coordination plan among implementing agencies.

(2) With respect to water supplies, efforts will be made to improve the management of the Metropolitan Waterworks Authority (MWA). Water bills must be collected more speedily and more effectively in terms of coverage. The Government will increase the registered capital of the MWA as counterpart fund to development projects financed by foreign loans as envisaged in the plan for developing this public utility.

(3) A new agency directly responsible for the development of drainage and sewerage systems as well as flood control in Bangkok will be set up.

(4) As for the housing sector, the Government will fully support the construction target of 24,000 housing units per year. Highest priority should be given to the lowest income group. Also, the guidelines for promoting cooperation between the National Housing Authority and the private sector for housing construction for medium and high income groups should be reviewed.

(5) The plan to alleviate traffic congestion in Bangkok can be divided into three phases as follows:—

(a) First phase: To set up a central coordinating unit responsible for the construction and supervision of road projects which include the enlargement of existing streets, the construction of roads to connect various main streets, the building of flyovers at traffic congested junctions and the provision of off-road parking areas.

(b) Second phase: To accelerate the implementation of the master plan for the construction of new roads and for the expansion of existing roads and strategic roads connecting main streets to facilitate traffic flows.

(c) Third phase: To accelerate the implementation of express ways and mass transit system. The management to the Bangkok Transport Company must be improved and measure relating to the regulation of private car usage will be applied. In addition, the establishment of local schools and school branches in various communities will be encouraged to reduce traffic flows resulting from transporting children to schools far from home.

2.2 Expansion of Infrastructure for Development

2.2.1 International Trade

(1) The Government will give full support to the construction of a modern international sea port with complete facilities and services for supporting external trade.

(2) The Government will support and encourage private investment for expanding the merchant marine, the opening of Thai shipping routes to different regions of the world, the ship-building and ship-repairing industry in line with external trade. Laws and regulations concerning commercial navigation, especially the number of seamen required for each ship, the inspection of each ship and the extension of ship licenses will be revised.

2.2.2 Production and Marketing

(1) Priority will be given to the construction and maintenance of vital roads in each region and rural roads in order to expand the transportation network to agricultural production areas. Road building to serve maize and sugar cane growing areas have already commenced in 1975 and 1976 respectively. Plans for road construction to serve other important agricultural areas such as cassava and rubber replantation areas are now being prepared.

(2) Feasibility studies of coastal ports will be carried out to determine the extent to which existing port facilities should be expanded and possible locations for further expansion. Coastal port expansion must, of course, be in line with local demand for such facilities. Dredging equipment will have to be acquired so that the stock of equipment sufficiently supports plans for expanding coastal port facilities as well as maintenance programmes. Port charges, pilot fees and service charges of these coastal ports will have to be readjusted in accordance with plans for expanding port facilities.

(3) The task of coordinating and planning the construction of rural roads will be assigned to a specific agency. In addition, measures will be designed to assist local authorities in implementing their own road maintenance programmes.

(4) A study should be launched as soon as possible to draw up guidelines and details relating to the delegation of responsibilities among local government organizations, the private sector and relevant government departments in order to comply with the national policy of decentralization. This study should provide guidelines for coordinating public and private sector investment plans and the delegation of responsibilities in port administration.

(5) In order to improve economic efficiency in the transportation sector, various measures must be revised and be reconsidered, including road taxes, taxes on motor cars, credit system for car purchase, import measures and the issuance of all kinds of vehicle licenses.

(6) The more important immediate solutions to the inland transportation problems include the extension of opening and closing time of all waterlocks for barges during the period when agricultural commodities must be transported to markets so as to shorten the journey and to save time and expenses.

(7) There should be a study of the demand for water for various activities. In particular, the benefits of releasing more water from the dams for facilitating transportation by inland waterways during the dry season should be compared with the benefits derived from second cropping. Guidelines for water allocation to various uses should be laid down to achieve maximum benefits for the country as a whole.

2.3 The Need to Develop the Infrastructure for Growth Centres

The Government will provide basic economic and social infrastructural facilities and services in urban areas that have been identified as regional growth centres in accordance with the strategy to concentrate investments of this type in specific areas to accelerate development. Public and private sector investments will be coordinated for accelerating economic growth in these areas to spread prosperity over a wider geographical area and as a way of reducing congestion in Bangkok. This strategy should also generate more employment in provincial areas and help to bridge the economic and social gap between those living in Bangkok and in the provinces. For a start, the Government will emphasize the provision of basic infrastructural facilities that are still lacking in selected growth centres. The main infrastructural facilities that will have to be provided can be summarized as follows:—

2.3.1 Chiangmai. The most urgent requirements include an improvement and expansion of the airport telephone network and telecommunications system, the expansion of public facilities and public utilities such as waterworks drainage and sewerage systems, housing and a city transportation system as well as improvements in the transporting of cargo and passengers.

2.3.2 Songkhla - Haadyai. The most immediate requirements include port facilities to transform Songkhla port into a major seaport of the Southern region, an industrial estate, the expansion of telephone and telecommunication systems and improvements in public utilities such as waterworks, sewerage and drainage systems. An urban traffic plan is also needed, as well as cargo and passenger transportation.

2.3.3 Phuket. The more important requirements include the development of port facilities, the expansion of the existing airport and the construction of scenic routes around the island for tourism as well as a telephone and telecommunication system. Public utilities that must be provided include waterworks, drainage and sewerage systems, housing and an urban road network for facilitating traffic flows. In addition, improvement have to be made on passenger and cargo transport.

2.3.4 Nakorn Ratchasima. The main requirements include the expansion of the feeder road network to link agricultural production areas with markets, the design of an urban road system to facilitate future traffic flows and a station for cargo and passenger transport. Public facilities and public utilities that have to be provided include a telephone and telecommunications system, waterworks, a drainage system and housing.

2.3.5 Udonthani. The main requirements include an improvement and expansion of the telephone and telecommunications system, flood control facilities, a road network to link agricultural production areas with markets, an urban road network for facilitating traffic flows, a cargo and passenger transport station and an extension of the existing railway service.

2.3.6 Ubol Ratchathani. The main requirements include the improvement and expansion of the telephone and telecommunications system, a road network to link agricultural production areas with markets and improvements in cargo and passenger transport.

2.3.7 Khon Kaen. The main requirements include an expansion of public facilities and public utilities such as waterworks, a drainage system, housing, a telephone and telecommunications system and a road network for linking agricultural production areas with markets. In addition, a passenger and cargo transport system is needed for Chumpae District which has the potential to be an important cargo and passenger transit centre in the not too distant future.

2.4 Guidelines for Pricing Policy

The tariff structure of various infrastructural services and facilities must be revised in the light of changes in the economic and social situation. The main principles that must be used for fixing the price of infrastructural services and facilities in accordance with the economic and social objectives and targets of the Fourth Plan include the following:—

2.4.1 With respect to community infrastructural facilities and services, the tariff rates should be based on the economic efficiency criterion and should be consistent with the income distribution and the decentralization of social services objectives. To achieve these objectives, the Government may have to support the relevant operating agencies in various ways on a case by case basis.

2.4.2 As for economic infrastructural facilities, pricing policy will be based on the economic efficiency criterion only so that the operating agency can eventually become selffinancing.

2.5 Operational Guidelines for State Enterprises in the Public Utility Sector

The policies and strategies that apply to state enterprises which provide public utility services to people in urban and rural areas must be clearly defined. The objective and operational procedures that state enterprises should accept and abide by include the following:—

2.5.1 State enterprises must prepare projects with clearly stipulated targets relating to work schedules and financial requirements.

2.5.2 With respect to government financial assistance to state enterprises, clear-cut targets must be set and the ways in which the government can assist these enterprises financially must be stipulated in detail.

2.5.3 Guidelines for joint investments by the Government and the private sector must be laid down for business activities in which private initiatives, if brought in, could increase benefits and raise the level of operational efficiency.

2.5.4 The management and organization structure of state enterprises must be improved and made more efficient. State enterprises must aim at improving the quality of the services provided and the coverage of these services so that more people can enjoy these facilities.

2.5.5 The pricing policy of state enterprises must be clearly stipulated in accordance with the current economic situation, the financial status of each enterprise, government support policy and income distribution objectives. State enterprises should avoid competing against one another through their pricing policies.

2.5.6 The Government may set up a new state enterprise to provide public utility services, but this decision must be in accordance with the policy to use state enterprises as a means of providing basic services at a reasonable price to people who would otherwise be neglected. Also, state enterprises should not compete with private enterprises.

CHAPTER VII

DECENTRALIZATION OF SOCIAL SERVICES

One of the main policies of the Fourth Plan is to emphasize the delivery of social services particularly to the rural population. This distribution should be as extensive as possible and should harmonize with and provide support for other development schemes included in the Plan. Financial and human resources from both the public and private sectors will be intensively mobilized for this purpose. The ultimate aim of this is to eliminate the gap between the social services provided in urban and in rural areas.

During the past development plans, social services did not really reach the hands of the majority of the population. This was due to the fact that Thailand's population grew at a high rate and that public services were scattered and uncoordinated. A new development approach is adopted in the Fourth Plan. This new approach, the decentralization of social services complements national development efforts in other fields which aim at reducing the existing economic and social gaps. The channelling of social services such as educational facilities, sanitation, social welfare, food and nutrition to the rural areas will contribute positively to achieving objectives of a more equitable income distribution, alleviating unemployment problems and reducing the rate of population expansion.

1. Educational Development

The essential themes of educational development in the Fourth Plan have been derived mainly from the education reform project which is the principal long-term education plan and the 1977-1981 education development plan which is to be implemented during the Fourth Plan period.

1.1 Educational Development

The present education system in Thailand is not totally consistent with the nature of the local economic and social circumstances. As each level of education has not been designed to fulfil any specific objective by itself, students are implicitly urged to proceed to a higher level. In order to provide educational facilities in accordance with economic conditions, to let education serve the purposes of social development under the existing economic and political circumstances and to deal with other problems related to education, concerted measures are needed within the framework of educational reform. The essential features of this framework include the following:—

1.1.1 Administrative Structure and the Decentralization of Administrative Authority in the Education Sector. Central, provincial, and local administrative systems of education should be organized in such a way that they are closely related with one another both in term of quality and efficiency.

1.1.2 Essential Contents and Learning Process. The curricula, essential contents and the learning process must be improved and adapted to comply with the national policies programmes and identity regarding educational organization within the framework of the democratic system having as basic foundation the institutions of the Nation, the Religion, and the King

1.1.3 Teachers' Role and Status. The role and status of teachers and principal personnel will be modified so that they can function as important vehicles for educational reform. Teachers are responsible for imparting knowledge and for stimulating the individual development of each student. They also have a significant role to play in society. In modifying the role and status of teachers, the following measures are to be taken.

(1) The quality of the teacher training system will be improved by providing teacher training courses at the diploma and degree levels only.

(2) The training of teachers and principle personnel should be carried out as soon as possible to prepare them for their new roles in the new set-up.

(3) Evening courses to train teachers and aggregate examination should be suspended. This should be replaced by more effective teacher training courses which provide teachers with more opportunity to improve their capabilities.

(4) Rural teachers will be trained and teacher training courses of short duration will be provided to those with knowledge in various fields to enable them to teach at the levels suitable to the needs of the local economy and circumstances, which need a wide variety of teachers with specialized vocational knowledge and experience.

1.1.4 Role of Private Education. The Government will stipulate long-term policies regarding the educational facilities to be provided by private institutions. These institutions should be given flexibility in administration and academic development under government supervision.

1.1.5 Out-of-School Education. Out-of-school education will be expanded to cover the whole kingdom for the sake of equality and fairness and to meet

popular demand. This type of education should include vocational training and should emphasize the teaching of subjects which are relevant to local needs. The training facilities provided by various government agencies and private institutions should be properly coordinated.

1.1.6 Educational Equality. The basic foundations for a more equal opportunity and right to educational services must be laid down in order to create fairness in a democratic society and to achieve educational equality.

1.1.7 Use of Mass Media for Educational Purposes. The mass media should be used to provide both formal and non-formal education. Priority should be given to non-formal education. Formal education that will be provided through the mass media will only cover branches of education that are short of qualified teachers.

1.1.8 Resource Mobilization and Educational Investment. Resources from both the public and private sectors will be mobilized for the education system. These resources will be allocated more efficiently and particular attention will be given to reducing unnecessary wastage. This is necessary for expanding existing educational facilities. In addition, the recipients of educational facilities should take part together with the Government in bearing an appropriate proportion of the responsibility regarding the costs of these facilities.

1.2 Educational Development During the Fourth Plan (1977-1981)

Educational development during the Fourth Plan aims at reforming every type of education at every level to ensure that the education provided is consistent with the existing realities and to fulfil the basic needs of society and national development by improving manpower quality and increasing the efficiency of the work force. At the same time, educational development has to be in line with government policies concerning the improvement of the quality and efficiency of the population.

The problems, objectives and development guidelines with respect to educational development in the Fourth Plan are as follows:—

1.2.1 Educational Problems

Educational development in the past encountered with a number of problems and obstacles including the following:—

(1) Educational Problems in General

(a) The present education system is not totally in tune with current social and economic realities and is not related to local needs and the requirements of the labour market. In other words, although Thailand is predominantly an agricultural country, its education system has not been designed to serve the main occupation of the population. Moreover, since the curricula used for various education levels are not self-contained or an end in itself, pupils are obliged to extend their education to higher levels. This has caused a large number of people to leave their original regions and occupations for educational purposes and the education that they receive basically trains them for the civil service rather than for the private sector.

(b) Out-of-school education has not been all that popular so far, despite the fact that the majority of the population has not received proper education in schools. Also, the education given in schools and out of school is neither related to one another nor complementary. This makes it difficult for students who have been educated in one or the other type of education to acquire additional knowledge according to their interest or capability.

(c) Problem of unequal opportunities in education. There is a great difference in the opportunity to receive compulsory education and education at higher levels as well as in the quality of education for those coming from well-to-do urban families and those living in poor remote rural areas or squatter settlements.

(d) The over-centralization of educational administration aggravates the problem of bureaucratic red-tape as considerable delays are created by local education units having to wait for decisions to be made by central authorities. This centralization also makes it difficult to provide educational facilities in accordance with local needs and leads to the failure to mobilize resources from the people who could take part in the provision of education.

(e) Efforts to analyse and appraise educational projects have been very limited. The results and problems connected with educational development projects that have already been implemented thus remain largely unknown.

(2) Problems at Each Educational Level

(a) Primary Education

(i) Compulsory education has expanded at a slower rate than the number of children at the compulsory education stage. As a result, the quality of education provided has suffered. The number of pupils who have not been promoted to a higher class account for about 16.3 per cent of that total number of pupils in primary education. This indicates to an extent the wastage in educational investment.

(ii) The Government has not succeeded in getting teachers to move to rural areas largely because insufficient benefits were provided and many rural areas still have security problems. The present personnel administration system is biased against teachers in rural and poor areas in that promotion for teachers in these areas tends to be slower than for those teaching in Bangkok. This is one of the reasons why there is a shortage of teachers in poverty areas.

(iii) Other problems include the shortage of text books and educational equipment and the curriculum which is not in line with the requirements of children and certain areas. The curriculum that is currently being used basically aims at preparing the foundations so that pupils can receive further education. However, as most rural children can only complete compulsory primary education, what they learn in primary school is not so useful as it does not provide much knowledge for living under local circumstances.

(b) General Secondary Education

The curriculum for this education level is not flexible enough to give students the chance to select subjects which are most suitable to their interest and character. Also, as the education provided at this level does not prepare students for professional careers, most students, having completed their secondary education want to proceed to higher education. In addition, shortages of teaching and learning materials in certain provinces are constraints on the quality of education that can be provided. The high repetition rate of students in the higher secondary level is evidence of the poor quality of education provided.

(c) Vocational Education at Secondary Level and Higher Vocational Education

The increase in enrollments in vocational schools and in institutions of higher vocational education has not been accompanied by an appropriate increase in the amount of teaching and learning equipment and materials. As a result, the quality of education suffered. Certain specialized courses provided by vocational education institutions were established without sufficient labour market information and as a result, the supply of skilled persons produced did not match market demand.

(d) Teacher Training

The objectives and the ways in which teachers are trained have not been clearly defined, partly because at present, teacher training courses are provided at so many levels and organized by so many different institutions. In addition to this, the accelerated production of a large number of teachers to cope with short-run supply deficiencies has generated a number of low-quality teachers. At present, a large number of evening courses provide teacher training programmes. As a consequence, a considerable number of teachers are produced, thus aggravating the problem of unemployed teachers.

(e) Higher Education

The principal problem at this level is the production of certain types of high level manpower for which there is no demand in the market. This lack of synchronization between demand and supply has brought about a situation in which many graduates of higher education institutes cannot find jobs.

In addition, not enough research work has been carried out within institutions of higher learning, due mainly to the lack of incentives and other administrative problems.

(f) Out-of-School Education

As the majority of the population at school age has still been left outside the schooling system, out-of-school education has played an important role, particularly in improving the quality of the nation's human resources. At present, there are many problems and weaknesses to be dealt with in the provision of out-of-school education. The major problem here is the lack of an overall policy framework spelling out concretely the objectives and functions of institutions which provide out-of-school education as well as delegating responsibilities to different agencies. This lack of policy and principal plan resulted in the problems regarding the coordination between the central and local administrations, and between responsible agencies, and regarding systematic follow-up and evaluation work.

1.2.2 Objectives of Educational Development

The main objectives of educational development in the Fourth Plan are as follow:-

(1) To transform the schooling system from the proportion of 4 : 3 : 3 : 2 (3) to 6 : 3 : 3 starting in academic year 1978 by changing annually the curriculum of one class of secondary education from 1978 onwards.

(2) To expand the enrollment for compulsory education at an average rate of about 6 per cent per year by aiming at a total number of enrollments in all classes of primary education of 9.6 million in the last year of the Fourth Plan.

(3) To expand the enrollments for general secondary education at an average rate of 11 per cent per year (applicable for the period 1978-1981 after the introduction of the system of 6 : 3 : 3 in 1978) by aiming at a total number of enrollments of three million in the last year of the Fourth Plan. In this context, the target is to construct new schools all over the country at a rate of 100 schools a year.

(4) To expand the enrollment for vocational education at an average rate of 8 per cent per year for vocational secondary education and 15 per cent per year for higher vocational education, by stressing the expansion in the fields of agriculture, technology and industry as well particularly in the areas related to agriculture as short-term courses.

(5) To reduce the enrollments for teacher training courses at the lower diploma level to 3,000 students in 1981, but expand the enrollments of courses at the higher diploma level to 58,000 students in 1981.

(6) To expand the enrollment for higher education at an average rate of 4 per cent per year. Quality improvement and the production of graduates in accordance with the demand of the economy.

1.2.3 Policies and Guidelines

1. Policies and General Guidelines

To achieve the above-mentioned objectives, the following policies and guidelines in educational development are to be applied:

(a) The system of educational administration will be modified so that there is more autonomy in policy matters concerning education in the central, regional and local areas.

(b) The existing educational system will be modified, so that it becomes more closely related to the nation's economic and social development. This will be done by linking the education system to local conditions, by creating greater flexibility in the education administration, by forging a link between in-school and out-of-school education and by providing educational facilities in line with the needs of the labour market.

(c) The quality of every level and type of education will be improved regardless of whether it is urban or rural education, or whether it is public or private education. This will be done by giving proportionally more attention to the areas or institutions coping with low-quality education.

(d) The contents and process of learning in each level and type of education will be modified to suit the actual conditions in each region and to meet the social, cultural, political, and economic needs of the region and the nation. This will be done by concurrently teaching both theoretical and practical subjects, by revising the curricula and process of learning into a combination that contains moral and spiritual wisdom along with other materialistic subjects, and by cultivating the belief in the democratic system with the King as the Head of State and the respect and affection for the institutions of the Nation, the Religion, and the King.

(e) The training system of teachers and educational personnel will be improved to produce teachers with the right quality and in the quantity required by the economy and provide those with vocational training with proper support in terms of welfare and well-being.

(f) The provision of educational facilities by private educational institutions will be promoted with respect to academic and other work in line with the national policies, programmes, and identity concerning educational organization. The Government will increase efforts to provide compulsory education on a nationwide basis and will allow private participation within the limits to be specified by the government.

(g) The scope of out-of-school education will be expanded to cover a variety of fields to meet the interest, needs and demand of the majority of the population.

(h) Efforts will be made to provide more equal opportunities in access to education. Compulsory education will be provided by the Government in every region of the country within as short a period of time as possible. As for non-compulsory education, the Government will encourage private institutions to participate to help create more equal opportunities in education in accordance with the economic conditions and local circumstances.

(i) Creative research and evaluation activities on national arts and culture will be promoted.

(j) Those who are selected from each region should be supported in their education according to the regulations to be determined. After the completion of education they should return to work in their own region.

(2) Policies and Guidelines for Each Educational Level

(a) Education at Pre-compulsory and Pre-primary Level

(i) Pre-compulsory education will be provided by the local administrations and responsible agencies in various forms according to local needs. At the kindergarten level, the Government will not provide the facilities, but will issue regulations to ensure the usefulness of kindergarten education for subsequent educational levels.

(ii) The Government will attempt to expand compulsory education of standard quality to the widest extent possible. The Government will increase its share in providing primary education vis-a-vis the private sector by applying budgetary measures and local planning.

(iii) The contents and process of learning will be improved by modifying the syllabi, the educational process and system accordingly.

(iv) A sufficient amount of textbooks and teaching materials will be provided for teachers and students within the limits of financial capacity.

(v) The wastage rate in education especially the repetition rate will be reduced.

(vi) The Government will encourage ordinary schools to function as genuine community schools. This will be done by encouraging them to use local sources of knowledge as much as possible for educational purposes, by persuading schools to take part in community development and by letting the community benefit from various facilities offered by the schools.

(b) Secondary Education, Vocational Education, Teacher Training and Other Special Types of Education

(i) Secondary education will be provided with no differentiation between the general and vocational streams, by exposing the students to academic as well as professional knowledge in accordance with their age, desire, interest and aptitude.

(ii) The syllabi will be designed to make education self-contained and to reflect the social and economic conditions.

(iii) The contents and process of learning will be improved to meet local needs, to comply with the national policy programmes, and identity regarding educational organization, and to serve the purposes of national development. The education offered will give students the opportunity to discover their own abilities and teach them to know how to think and act.

(iv) The rating system will be modified by making it part of the learning process and by delegating the rating authority to schools. Standard controls on education quality will be simultaneously developed.

(v) The amount and quality of secondary schools in various provinces will be increased and improved respectively in equitable proportion and in line with local needs.

(vi) School zones in large towns and local areas will be demarcated. This demarcation will take into consideration the conditions of each local area and the duration of study.

(vii) School fees at the secondary education level should be allowed to increase to reflect the costs of providing this education. At the same time, the Government should increase the number of scholarships for poor students at this level.

(viii) Vocational colleges should improve their syllabi and text books by stressing genuine vocational subjects to enable the graduates to find jobs in which their knowledge can be applied.

(c) Teacher Training

(i) The training of teachers and educational personnel will be coordinated so that the production of all these types of manpower of every institution and at every level will be consistent with the objectives of the expansion of education of every type at every level.

(ii) Programmes for training teachers working in the rural areas will be improved and expanded.

(iii) Each teacher training institution will be responsible for training practising teachers to improve their efficiency and for expanding facilities to accommodate more students following the forthcoming new regulations which will gradually reduce evening courses in appropriate stages.

(iv) The syllabi of teacher training courses will be improved to take into account actual conditions and local needs. These changes will be made in conjunction with changes in the syllabi at primary and secondary levels to ensure consistency.

(v) The quality of the lecturers of teacher training qualification, knowledge and courses will be improved in terms of teaching experience.

(d) Welfare Education, Special Education and Other Types of Education

(i) Welfare education and other special types of education will be provided and expanded for groups of children such as the blind, the deaf-and-dumb, the mentally retarded, the handicapped, and those living in barren and remote areas for whom the Government wishes to provide additional services.

(ii) Special occupation-oriented education including physical education to students and other people will be provided and/or expanded.

(iii) Children and youth activities which are deemed to be beneficial to the country such as the boy scouts and subsidiary red-cross activities will be organized and encouraged.

(e) Higher Education

(i) The quality of higher education will be improved by the emphasis on the raising of educational standard and the quality of teachers.

(ii) The syllabi, the contents, the process of acquiring theoretical and practical knowledge and the procedure for selecting students for higher education will be revised and improved with the aim of gearing higher education to produce graduates who can serve society more effectively.

(iii) The number of graduates in each field will be produced in the correct proportion in accordance with market demand and in relation to the requirements for national development.

(iv) A system of community colleges in various regions will be built up in stages which comply with the economic and social conditions.

(v) Institutions of higher learning will be encouraged to increase their research activities particularly in the writing of text books and the provision of academic services to the community including the more intensive conservation of Thailand's cultural heritage.

(vi) The facilities offered by the Open University System will be supported and the Government will emphasize the use of various teaching media to encourage students to learn on their own.

(vii) Private institutions of higher learning will be encouraged to expand their educational facilities in areas where they can provide high quality education, with the exception of teacher training education, and educational science which the Government will assume sole responsibility in providing.

(viii) Tuition fees of government higher education institutions will be raised to a more appropriate level to mobilize resources from various sources so that these institutions can increase their revenues and thus allow the Government to reduce its share of financial support.

(ix) Institutions of higher learning should be encouraged to cooperate and lend assistance to one another in order to enable these institutions to perform their functions fully in accordance with their special characteristics, and to improve the quality and efficiency of higher education.

(f) Out-of-School Education

(i) Various government and private institutions that provide out-of-school education will be coordinated so that this education may reach the majority of the population and meet local needs.

(ii) Course contents to suit the demand of the local population will be adapted according to the results of studies to find out what the local people need, what they want to learn and at which level.

(iii) Agencies responsible for the provision of out-of-school education will be encouraged to adopt an evaluation system to check on their work for improvement purposes.

(iv) The role of the existing mass media in various forms will be expanded to provide out-of-school education. Radio stations all over the country will be encouraged to broadcast informative programmes to broaden the knowledge of the population. The types of programmes to be emphasized include those relating to occupations in provincial areas those which can influence people to be good citizens, and those which promote understanding in the democratic system with the King as the Head of State and cultivate affection and respect for the institutions of the Nation, the Religion, and the King

(v) Local communities, private individuals and groups of people will be encouraged to organize child-care centres, particularly in rural areas in slum areas and in densely populated areas. At the same time, the mass media and relevant institutions will provide information and impart knowledge to parents on the upbringing of their children.

2. Public Health Development

The public health development programme in the Third National Economic and Social Development Plan aims at encouraging and expanding public health services to the rural population and emphasizes disease prevention, health promotion and the reduction of population growth. However, public health problems are still numerous. The main problems include the following.—

2.1 Problems

The most serious diseases in Thailand include food and water-borne diseases, insect and animal borne diseases, dysentery, diarrhoea, intestinal parasites, typhoid, cholera, malaria and haemorrhagic fever. These diseases are the principal causes of illness and death. Although the rate of morbidity and mortality of these diseases is not high, the morbidity rate of diseases of respiratory system and skin is rather critical. Another group of infectious diseases such as venereal disease is still highly prevalent and dangerous with a morbidity rate of 382 per 100,000 persons. The rate of narcotic addiction among school children is 750 per 100,000 persons.

2.1.1 Shortage of Medical Services in Rural Areas. is a major problem. There are considerable differences between services provided by the Government to urban and rural inhabitants. This can be shown by the ratio of hospital beds to the number of population which at present is 1:150 in urban areas and 1:900 in rural areas. The number of physicians to the population size in the Central region is 1:1,621 persons while the corresponding ratio in rural areas is 1:30,863 persons.

Due to the shortage of medical services, illnesses are rampant in rural areas. Records indicate that about 51 per cent of the total number of sick people in rural areas buy medicine themselves without getting prior advice from a doctor. Also, only 15 per cent of the total number of people who are sick in rural areas use government health facilities such as hospitals and health centres. The rest receive treatment from private clinics or traditional doctors or witch doctors. The main reason for this is that most of the medical service centres such as hospitals are located only in urban areas or in the larger districts, while the number of first class health centres is still inadequate. The ratio of the number of districts to the number of health centres is only 1 to 0.39 which is still a long way away from the 1:1 ratio which is what it should be.

2.1.2 The Quality of Medical Services provided to the rural population is still far inferior to that provided for the population in Bangkok. This is due to the shortage of medical personnel in comparison with the number of patients. Thus, doctors cannot spare enough time to examine and diagnose patients. In addition, there is also a shortage of equipment, medicine, medical supplies and specialized doctors. Medical care in rural hospitals in general is inferior to the services provided in urban areas. The ratio of doctors and nurses to hospital beds can be summarized as follows:— in the Central region, on average, one doctor and 2.8 nurses are assigned to 6 beds whereas in rural areas, on average, one doctor and 3.1 nurses must tend to 24 hospital beds. This is the reason why patients from rural areas prefer to come for treatment in Bangkok hospitals. This results in unnecessary waste of time and expense.

Technical support is lacking, especially medical investigation and research. These facilities still have not been improved or expanded to any degree. Technical improvements to an extent have been provided in medical schools, but in rural areas medical personnel has almost no chance to learn about new medical techniques, to receive in-service training and to benefit from proper supervision. Moreover, high-level personnel usually have to spend most of their time doing administrative work rather than technical and so have a limited amount of time to keep up with development in their profession.

2.1.3 Problems of Shortage and Distribution of Public Health Personnel. At present, 385 doctors are produced each year and this figure will be increased to 500 during the Fourth Plan period. Nevertheless, this rate of increase in the number of doctors each year is still too low and a situation in which there is a shortage of doctors will continue for some time. During the Fourth Plan, para-medical personnel will be trained to help doctors provide medical care and to help alleviate problems stemming from the shortage of doctors in rural areas.

2.1.4 Problems of Environmental Health. The high population growth rate together with the expansion of industry and trade which encourages the migration of rural people into the big towns has brought about a situation in which a large number of people are crowded into a very limited area. At present, there is a housing shortage of about 110,000 units among the low-income urban population. In other words, about 20 per cent of the urban poor live in slum. The slum areas with poor sanitation are spreading in several areas in the bigger towns. This is one of the main sources of infectious diseases, illnesses and malnutrition among preschool children.

The expansion of industry and trade without effective planning relating to land utilization, the construction of sewage disposal systems and similar matters mean further environmental deterioration. The main environmental problems that result from the lack of effective planning include water pollution, air pollution and the pollution of food such as vegetables and drinking water due to the increasing use of poisonous chemicals and insecticides.

2.1.5 Lack of Public Participation. Government public health personnel have not received full cooperation from villagers relating to such matters as the reporting of infectious diseases. Even now, there are communication problems between government officials and villagers, the diffusion of public health information is very limited and primary health instruction which is to be given to villagers is not all that effective. Further work may have to be done through village health volunteers.

2.1.6 Coordination Problems and the Failure to Integrate Various Public Health Services. This heading can be split into two parts. First, there is the problem of coordinating operations which stems largely from over-centralization of administrative powers. As a result, there are unnecessary delays in the delegation of work and field officers have to work under various constraints resulting from such an inflexible system. Secondly, the public health development plan has not been properly integrated into the overall plan for the country as a whole. An example of the first problem is the lack of coordination between government officials working to prevent and control diseases and those responsible for medical care and treatment, even in the same region or province. This is largely because the administrative procedure is so rigid and the fact that field officers are responsible to supervisors of different government units. As a result, the people who should benefit from a number of services are inconvenienced by such uncoordinated government effort.

2.1.7 Lack of Public Health Services for Certain Groups of People. Certain groups in Thailand deserve special attention. These groups include the hill-tribes people of the Northern region, the Islamic Thais in the four southern-most provinces of the Southern region, inhabitants in sensitive areas, members of various land settlement colonies and the poor. Each group has its own specific problems which must be solved, for instance, living conditions, economic status, tradition and culture, language and income level.

2.2 Policy

In the Fourth National Economic and Social Development Plan, the Government will provide health services such as medical care and treatment, disease prevention and health programmes for all sectors of the general public. These services will be provided particularly in rural areas. The health service system will be urgently improved and developed in the following ways :—

2.2.1 The number and efficiency of health personnel of all categories will be increased through a revision of selection procedures, by organizing refresher courses for personnel already employed and in devising measures relating to the distribution and utilization of manpower in the public health service.

2.2.2 Medical care services and treatment for the benefit of poor people will be improved and expanded.

2.2.3 Effort to control, prevent and treat various communicable diseases will be organized more effectively so that people in all areas will be safe from these diseases.

2.2.4 Work on the investigation and diagnosis of diseases in general and the part that concerns medical care, treatment and health services in provincial areas will be reinforced.

2.2.5 Efficiency of work on family planning will be increased so that such services cover a wider geographical area and have more effect on the population growth rate.

2.2.6 The health and nutritional status of mothers and children will be improved. Infants and pre-school children will receive adequate supplementary food supplies which are necessary for their growth and development.

2.2.7 Efforts to check environmental deterioration which affects public health will be strengthened, especially the efforts to ensure adequate supplies of safe and clean drinking water for the population in urban and rural areas. Sewage disposal systems will be set up. Measures to prevent poisonings from food, medicine and other poisonous substances will be made as effective as possible.

2.2.8 The method of production, marketing, use and distribution of medicine must be supervised more effectively with emphasis on improving the quality of medicine and regulating prices. Drug stores and pharmaceutical trading companies will be properly supervised for public benefit. Domestic production of raw materials for the pharmaceutical industry will be encouraged.

2.2.9 Community mental health services will be improved and expanded. Special emphasis will be given to efforts to alleviate problems resulting from drug addition and efforts to control the use of other chemical substances which have effects on the nerve system.

2.3 Measures and Methods of Implementation

Measures and methods of implementing health services which have been reorganized and incorporated into the Fourth Plan include the following :—

2.3.1 In Rural Areas

(1) Health services will be integrated so that medical care and treatment can be provided to the rural population in conjunction with preventive measures. The Government will consider proposals for increasing the number of medical and health centres, health centres and midwifery centres. The organization of village health volunteers and communicators will be included in the health service system.

(2) Manpower at various levels will be strengthened through training courses and refresher courses. Special arrangements will be made to train para-medical personnel for treating illnesses in rural areas.

(3) Health volunteers and communicators will be selected and trained to provide primary medical care and treatment. These volunteers will also be responsible for collecting health information and relaying household remedies to the villagers. These volunteers will act as coordinators between villagers and local authorities. There should be at least one volunteer to each village.

(4) Efforts will be made to provide supplies of potable water to every village.

(5) A radio communications system will be used to facilitate the transference of inhabitants of remote areas who are sick to various health centres. This to an extent can be done through the communications network of the Ministry of the Interior or by setting up a new system.

2.3.2 In Urban Areas (including Bangkok)

The principal guidelines include the following :—

(1) Medical care services and treatment will be expanded and improved by reorganizing administrative procedures, for example, treatment time can be reduced to allow a more rapid discharge of patients from hospital. At the same

time, hospitals in the Central region will be strengthened so that they can provide technical support to provincial hospitals.

(2) Private hospitals will be encouraged to provide supplementary medical care and treatment. This can be done through the tax reductions on medical equipment or the provision of credit to this sector to stimulate investment in this area.

(3) The work of local health service centres will be improved and the community health programme in low-income areas will be expanded.

(4) Health programmes for workers will be initiated, starting with programmes for factory workers.

(5) Priority will be given to environmental development, especially sanitation aspects, such as sewage disposal, garbage disposal, food sanitation and the conservation of water resources as well as public parks.

2.3.3 Measures for Improving the Management of Medicine and Medical Supplies

Surveys will be carried out to provide more information on the demand for various types of medicine. The Government will improve its supervision of the production of medicine so that there is more standardization in the types of medicine produced and more consistency between demand for and supplies of various types of medicine. At the same time, government supervision of the use of medicine must be improved to ensure that medicine is used correctly. Action will be taken to limit false claims in advertisements of various pharmaceutical products. Government pharmaceutical units will be increased in number.

2.3.4 Decentralization of Public Health Management

Executive power will be more and more decentralized to the provincial administration. This will include planning, implementation, decision making, budget allocation and personnel control. This should enable provincial administrators to make their own decision in solving local problems with more flexibility. Adequate assistance will be provided to the provincial administration so that it can carry out its functions as stipulated by the law.

Operation plans at the provincial and community level will be prepared and these plans will take into account local conditions and national development policies. Improvements will be made in the supervision and reporting system at various levels. Health workers of various categories will be trained and the private sector

such as private colleges will be encouraged to participate in the training of certain types of personnel which are still in short supply such as nurses and nurse-aids.

2.4 Public Health Development Targets

The main public health improvement targets that have been set in the Fourth National Economic and Social Development Plan are as follows:—

2.4.1 The Number of Health Personnel. will be increased and such personnel will be stationed over a wider geographical area.

During the Fourth Plan period, the number of health personnel will be increased proportionately with the population increase.

(1) Overall

physician	:	population	=	1 : 10,500
pharmacist	:	population	=	1 : 78,303
dentist	:	population	=	1 : 71,810
nurse and nurse-aid	:	population	=	1 : 2,900
midwife	:	population	=	1 : 5,886
sanitarian	:	population	=	1 : 4,125

(2) In Rural Areas

physician	:	population	=	1 : 18,700
pharmacist	:	population	=	1 : 146,800
dentist	:	population	=	1 : 108,600
nurse and nurse-aid	:	population	=	1 : 2,900
midwife	:	population	=	1 : 5,300
sanitarian	:	population	=	1 : 6,000

Note :— The proportion between health personnel to the population as indicated above does not include private enterprise.

To promote the efficiency of health workers, in-service training will be provided to:—

physician	500
practical nurse	1,400

nurse and nurse-aid	10,000
midwife	7,500
sanitarian	6,100
trainers (for various courses)	600

In addition to this, the public will be encouraged to participate in public health service activities by organizing the village health volunteers and communicators. Training of 22,400 health volunteers and 200,000 communicators at community level will be conducted.

2.4.2 Expansion of Medical Care and Treatment:- The number of hospitals will be increased so that there is at least one hospital in each district of the country. In addition, medical and health centres will be strengthened and improved. It is envisaged that about 20 per cent of the rural population will have access to these facilities.

The number of beds that will be increased in the hospitals, both in provincial and in urban areas during the Fourth Plan will be as follows:-

area	no. of beds
in the provincial areas.....	12,290
in urban areas (ie. in Bangkok)	802

These increases will then produce the following physician : bed : population ratios

area	ratio
in the provinces.....	1:30.3:18,700
in urban areas.....	1:14.0:1,639

The targets for renovating and constructing hospitals will be as follows :-

District hospitals to be Renovated and constructed	amount of increase (Units)
with about 60-120 beds.....	15
with about 30 beds.....	25
with about 10 beds.....	60
health centres	600

2.4.3 Control, Prevention and Treatment of Communicable Diseases :-

Communicable disease which are principal causes of illnesses and death will be kept under control, prevented and treated so that the rural population

will be relatively free from such diseases. The following targets have been set for reducing morbidity and mortality rates :—

- (1) to reduce morbidity and mortality rates from food and water-borne diseases by 30 per cent and 50 per cent respectively,
- (2) to reduce morbidity and mortality rates from malaria and carrier-borne diseases by 30 per cent and 50 per cent respectively,
- (3) to reduce the morbidity rate of diseases of the respiratory system and skin diseases by 25 per cent and 15 per cent respectively,
- (4) to reduce the morbidity rate of diphtheria, whooping cough, tetanus and polio by 50 per cent, and
- (5) to reduce the morbidity rate of leprosy by 60 per cent by control and 5 per cent by treatment.

2.4.4 Support Work and Investigation, Diagnosis and Research

To utilize work on investigation and diagnosis of diseases to the maximum extent in national health programmes, medical care and health services in provincial areas will be supported by medical science techniques. Work will be divided into short-term and long-term categories with the following objectives :—

- (1) long-term objectives :— to organize full-fledge investigation units at the central, regional and provincial levels as well as in health centres,
- (2) short-term objectives :— to organize provincial investigation units in 71 provinces and to coordinate work at regional and central levels, and
- (3) principal diseases to be studied include infectious diseases from virus, bacteria, parasites and fungii.

To carry out this work, 325 new investigation units will be set up at the provincial level, including hospitals and other health units. At least 51 existing units in various regions and provinces will also be reorganized.

2.4.5 Expansion of Family Planning Services. In order to serve the entire population more effectively and to reduce the rate of population growth to 2.1 per cent per year by the end of the Fourth Plan, family planning services will be expanded to cover 3,029,000 new recipients and 1,630,107 old recipients by organizing 40 mobile promotion units and 45 mobile family planning service units.

2.4.6 Improvement of Health Status of Mothers and Children

To reduce the death rate of mothers and children by 20 per cent, public health services must be improved and expanded to cover a large number of people. Nutritional status of pregnant and lactating women, infants and pre-school children will be improved. The targets for expanded services in rural and urban areas are as follows :—

(1) In Rural Areas

types of service	target group	coverage (%)
pre-natal care	pregnant women	80
delivery service	pregnant women	44
post-natal care	women after delivery	68

(2) In Urban Areas

type of service	target group	coverage
pre-natal care	pregnant women in Bangkok	90
	pregnant women in other towns	80
delivery service	pregnant women in Bangkok	90
	pregnant women in other towns	60
post-natal care	women after delivery	68

2.4.7 Prevention of Environmental Pollution and the Supply of Safe Drinking Water

Sewage disposal systems and supplies of safe drinking water will be expanded to cover a larger number of people, from 14 per cent to 25 per cent. If the system is effective, the incidence of water-borne diseases will be reduced from 26,600/1,000,000 persons to 18,700/1,000,000 persons, or by 30 per cent. With respect to safe drinking water, supplies will be divided into 400 central systems and 10,000 small-scale systems (for schools and temples).

For the prevention of environmental pollution due to poisonous substances, care will be exerted to protect the employees of all occupations numbering 14-16 millions by the organization of nation-wide occupational health centres.

2.4.8 Control Over Food and Pharmaceutical Supplies

Production, marketing, administration and distribution of medicine will be controlled to ensure high quality products for domestic consumption. Food control activities will be strengthened so that the public will be better protected

against the dangers of consuming unhygienic food. Through this approach, the morbidity and mortality rates from food and water-borne diseases can be reduced by 50 per cent and 30 per cent respectively. Food control and control over pharmaceutical supplies will be expanded to cover 30 per cent and 20 per cent of the population respectively.

To attain the above mentioned goals, the following activities will be carried out:—

- (1) training of 10,000 food handlers and 5,000 suppliers of medicine.
- (2) 20,000 samples of food and pharmaceutical products will be collected and analysed.
- (3) 10,000 food shops and 50,000 pharmaceutical product factories and pharmacies will be inspected per year.

2.4.9 Community Mental Health Service

Community mental health services will be expanded to cover a larger number of people living in rural areas and adapted to local needs. This can be done by integrating about 10 per cent of mental health services into existing public health activities. The number of beds and personnel will be increased to attain the following ratios 100,000 people to 250 beds and 25 patients to one physician, four nurses, one social worker and one psychiatrist. The envisaged target for the treatment of drug-addicts, including in clinic, toxic-effect withdrawal and out-patients will be around 103,920 cases. With respect to prevention, 111 advisory service units will be set up and 4,225 schools will be served through the participation of teachers.

2.4.10 Dental Health: The specific objective here is to lower the incidence of mouth infections such as tooth decay and gum diseases by 10 per cent. The target is to provide dental care services to primary school children in increasing amounts. Such services will be provided by both the Government and the public sector. Dental health services will be extended to reduce the morbidity rate and expand dental life for at least 30 per cent of the urban population and 10 per cent of the rural population.

To attain this goal, the proportion of dentists to population will be 1: 71,810 and dental schools with 100 students each will be expanded and constructed in Cholburi and Khon Kaen provinces.

2.4.11 Promotion of Health Education

The health education programme must play an active role in the reduction of principal public health problems on the following aspects:—

- (1) reduce household accidents to
8.08/100,000 by 1981

- (2) reduce road accidents to 10.5/100,000 by 1981
- (3) reduce accidents from agricultural occupations to 9.66/100,000 by 1981
- (4) reduce the number of drug misuse and drug addiction from 750/100,000 to 500/100,000 by 1981
- (5) reduce protein deficiency diseases by 10 per cent by 1981

Health workers at all levels will be assigned to spend 10 per cent of their total working hours in educating the public on health matters. Methods to be used will be education campaigns such as films, posters and leaflets.

3. Food and Nutrition

3.1 Food and Nutrition Problems

Malnutrition is one of the major problems affecting the life and well-being of the population of Thailand, especially infants and pre-school children. The Third Plan had stipulated a number of measures to alleviate the malnutrition problem, but these measures were rather limited. Records show that 381 child nutrition centres were built during this period and these centres provided services to approximately 15,240 pre-school children. In addition, an experimental school lunch programme was provided for only 2,400 school children. This represented only 0.6 per cent of the total number of children with malnutrition problems. Therefore, in the Fourth Plan, it is essential to expand the implementation target so that services are provided to a larger target group.

Major malnutrition problems are protein-calorie malnutrition, Vitamin A, B-1, and B-2 deficiencies, endemic goitre due to iodine deficiency, anemia due to iron deficiency and bladder-stone.

The most severe malnutrition problem is protein-calorie malnutrition among infants, pre-school children, school children, pregnant and lactating mothers. It has been found that approximately 52-76 per cent of pre-school children aged from 6 months to 5 years living in slum areas of Bangkok and rural areas are suffering from malnutrition. In addition, in 1976, malnutrition was the root cause of 55,000 deaths.

With regard to school children in slum areas of Bangkok and rural areas, malnutrition prevalence is estimated at 30 per cent while the prevalence of goitre in the Northern region stands as high as 72 per cent. Among pregnant and lactating mothers, the rate of malnutrition due to the lack of supplementary protein food is rather high, causing lower birth weight of new-born infants than the average birth weight of those from medium income families (approximately 3 kilogrammes).

Among the population group at large, especially the labour intensive groups such as farmers, labours, monks, soldiers and prisoners, malnutrition problems are common. It was found that the average weight of a Thai male is about 54 kilogrammes (FAO's standard weight 65 kilogrammes) and the average weight of a Thai female is about 47 kilogrammes (FAO's standard weight 55 kilogrammes).

Poverty is the main reason why food consumption is not sufficient to meet daily requirements. From various research studies, low per capita income families in Bangkok spend an average of 47.72 per cent of their monthly income per family on food while rural families spend about 48.93 per cent. Severe malnutrition problems are most prevalent in the slum areas of Bangkok where daily calorie intake stands at only 70 per cent of what should have been consumed daily. It can be concluded that people living in the Northeastern region face serious malnutrition problems while the malnutrition problems in Bangkok are confined to slum areas.

In general, people lack knowledge of proper utilization and consumption of food. Traditional beliefs of various localities are causing improper food consumption since the majority of the population still believe that daily food consumption is just to fill one's stomach.

3.2 Policy

In the Fourth Plan, the Government will promote the status of food and nutrition to solve the problems of vulnerable groups of the population such as infants, pre-school children (below 5 years of age) and mothers. The main measures and goals for implementation are as follows:—

3.2.1 Short-term

(1) Measures and Methods of Implementation

(a) Mothers and children (below 6 months old) provision of nutrition education to mothers with emphasis on

- (i) breast-feeding
- (ii) local nutrition food production
- (iii) health care for pre-school children
- (iv) education on nutrition values of various foods and the sharing of food within the family

(v) so that infants will receive from nourishment from their mothers, the Government will supplement the mother's diet with high protein foods, vitamin pills and iodated salt. (from mother and child health programme).

(b) Pre-school Children

(i) supplementary protein foods for undernourished pre-school children will be provided at various service centres to be organized by the Ministries of Public Health, Interior, Education and the Bangkok Metropolitan Administration. These services will also be provided to pre-school children from six months to two years old. The Government will provide high protein-calorie supplements together with other locally produced supplementary protein foods to reduce the prevalence of protein-calorie malnutrition,

(ii) village feeding centres will be established, using homes of village headmen, etc., and

(iii) home delivery services for children with serious malnutrition problems will be organized.

(c) School Children

Experiments on food programmes for school children from poor families will be conducted in order to seek suitable models and methods since this programme is expensive.

(d) Production and Distribution of Supplementary Foods

The production of high protein foods will be encouraged and the Government will promote domestic production of high protein foods. It may be necessary to set up a public entity to produce high protein foods, or else the private sector might be allowed to produce these supplementary supplies of food with the Government regulating the price of such foods for consumer benefit. At the same time, the Government will promote the production of raw materials such as mung bean, soya bean and other plants which are used to produce infant and high-protein foods.

Support will also be given to the local production of high nutrition foods for local consumption in areas where food shortages exist. Provincial and district agricultural officers will be requested to help select the villages which should receive such assistance.

(e) Training

An agency will be given the responsibility in production and training of personnel at various levels for the implementation of national programmes. The Ministries of Public Health, Agriculture and Cooperatives, Interior and Education as well as the Bangkok Metropolitan Administration which are involved in the field of food and nutrition can help here. Research on food and nutrition will be supported and disseminated to the general public. A campaign will be conducted to provide nutrition education for pregnant and lactating mothers as well as school children.

(2) Implementation Measures

A National Food and Nutrition Committee will be set up as soon as possible to coordinate the operations of various agencies working in this field. A Food and Nutrition Institution will be established for promoting research activities and training of personnel involved in the implementation of food and nutrition programmes and the dissemination of knowledge on food and nutrition to the general public. An agency will be established to produce infant and supplementary foods in sufficient quantities. This agency will aim at reducing per unit cost of production and will be responsible for distributing products to low-income people in urban and rural areas. The Provincial Food and Nutrition Committee will be organized to operate at the local level.

(3) Implementation Target

The high prevalence rate of protein-calorie malnutrition among children under four years of age will be reduced. In addition, the nutritional condition of mothers (pregnant and lactating mothers) will be improved. The Government will extend health services in this field during the next five years as follows:—

category of children	target (no. of children)
infants less than 6 months old	668,250
children between the ages of 6 months and 2 years	628,750
pre-school children, 3-5 years old	748,500

For infants less than 6 months old, health services will be provided through mothers via the provision of basic knowledge on food and nutrition. During the next five years, 4,803 child development centres will be built and nutrition education will be provided for 926,000 mothers.

With respect to the production and distribution of supplementary foods, the Institute for Food Research and Product Development at Kasetsart University will cooperate with the Ministry of Public Health to promote the production of 32,126.95 tons of such foods for 628,750 children (6 months–2 years old). In addition, 6,236.2 tons of supplementary foods will be provided for 748,500 pre-school children (3–5 years old).

The Department of Agricultural Extension will support the production of raw materials for the production of infant and supplementary foods through encouragement of soya bean and mung bean cultivation. During the next five years, 73,600 tons of these raw materials should be produced.

Training

Training for personnel at various levels will be as follows:—

personnel category	No. of persons
— nurses	657
— midwives	1,350
— supervisory nurses	183
— nurse aids	165
— district agricultural officers	632
— housewives	15,000
— child attendants	12,127
— agricultural youths	6,000
— agricultural teachers	700
— health education teachers	3,245
— physical education teachers	700
— health volunteers	22,400
— community development workers	2,087
— teachers	271
Total	<u>65,517</u>

3.2.2 Long-term

(1) Strategies and methods of implementation

Strategies for implementing the long term plan will concentrate on expanding the scope or work both in terms of target groups and in terms of operational procedures. This is expanded below:—

(a) School children. The Government will provide better nutrition foods through school lunch programmes to school children in the 6–14 year old range who come from poor families. Nutrition, health and physical education will be provided in conjunction with school health and dental services. These different services will be integrated and implementation will be on an experimental basis to find the most appropriate way to help these children. The best approach will then be expanded to all parts of the country.

(b) Vulnerable target groups. The vulnerable target groups include monks, soldiers, low income families and labourers. An experimental protein feeding programme using products made of mung bean and soya bean for these groups of population will be implemented. If results prove to be satisfactory, the programme will be expanded.

(c) Training and research. Training on food and nutrition at the university level will be provided. Nutrition education will be included in the in-service training courses for public health personnel at all levels, including personnel

from the Ministries of Education and Interior at both primary and secondary education levels. The Institute of Food Science and Technology will be responsible for food research and the Institute of Food and Nutrition for nutrition aspects.

(2) Implementation Measures

(a) Realistic measures for controlling the price and quality of nutrition foods for internal consumption will be designed.

(b) A single agency will be given responsibility for the distribution of locally produced food in sufficient quantity in response to the needs of the population at large. This agency will have to concentrate on restructuring the distribution and transportation system, the marketing system, the storage system, the export and import of foodstuff.

4. Social Welfare

In the Fourth Plan, the Government will adopt the policy of promoting and lending support to social welfare work both in the public and private sectors in order to rapidly distribute social services to poor people in squatter areas of large towns and those in remote rural districts. The main objective is to provide welfare and security to those who are in need and those who are not able to help themselves such as children, old people, crippled and handicapped people, certain categories of women, hilltribes, people living under barren conditions and prisoners. Urban recreational centres will be constructed such as public parks, zoological gardens and sports stadiums. Recreational activities will be provided for children, young people and the general public.

With regard to labour welfare, the problems that demand urgent solutions include the improvement of working conditions in terms of security and safety and insurance against accidents or becoming crippled while working. This insurance must be sufficient to enable unfortunate workers to survive and prevent them from being neglected by their employers and society as a whole.

4.1 Social Welfare

4.1.1 Guidelines and Measures for Helping these Target Groups

(1) Children and Young People. A large number of children and young people have problems as a result of a lack of guardianship within the family and resulting social and economic pressures. Many measures have been proposed for dealing with this problem, including the carrying out of a survey to determine the approximate number of problem children who need assistance so that the Government can provide sufficient assistance. In helping these children and young people, the aim is to help them to ultimately help themselves, so that they have the means of earning a living and the chance to become decent citizens in future. In giving assistance to crippled and handicapped children, private organizations will be encouraged to take part.

(2) Old People. Old people are here defined to include women aged over 60 years of age and men over 65 years of age of which there are about 1.68 million at present. Many of them are now left on their own, owing to economic and social pressures. Only 1,500 of these people are provided with government welfare services in any year. The approach that will be adopted to deal with this problem is to survey the number of old people who are eligible for assistance. Criteria in granting welfare services will have to be explicitly laid down both for the central region and outlying areas. Private organizations will also be persuaded to participate in this process.

(3) Crippled, Handicapped and Deprived People

The 1970 population census indicated that there were 142,200 handicapped people in Thailand who needed assistance. Since then, the number has increased considerably.

The guidelines and measures to deal with this problem include a survey to categorize those to be assisted and assigning relevant agencies the duty of providing medical treatment and equipment such as artificial arms and legs, canes for the blind, hearing aid, etc, to enable handicapped people to participate in normal activities. Furthermore, occupation-oriented training centres especially for the crippled will be established to give these people the opportunity to develop their own skills and earn their own livelihood. For those who are absolutely not capable of helping themselves there will be welfare service centres rendering services free of charge to those handicapped with no friends or relatives and with a charge for others. Charity foundations or private organizations which provide similar services will be supported through government subsidies and public announcement of their merits.

(4) Certain Categories of Women. There are many prostitutes in Thailand. It was estimated that in 1975, there were 76,000 female prostitutes in Thailand. It was also estimated that about 12,000 women were drawn into prostitution as a result of the presence of the U.S. military bases in Thailand. Problems relating to prostitution are still rather serious and need to be dealt with urgently. A survey will be carried out to determine the number of prostitutes in Thailand to assist the authorities in preparing corrective measures such as the provision of vocational training facilities for these women.

(5) Hilltribes People. At present there are about 500,000 hilltribes people from such tribes as the Meo, Yao, Lee-saw, Muser, Egaw, Karen and Haw, who live and work in the mountainous areas in North Thailand. These hilltribes people whose number constantly increases, have as a main occupation the growing of poppies, subsistence farming and hunting. Although a hardworking people, the hilltribes people still cannot manage to earn enough for their own living as farming in infertile elevated areas tends to produce low yields. Moreover, these people still use traditional methods in agriculture which rapidly cause deterioration in soil quality. These tribes, being therefore constantly on the move to find new farm land, destroy natural resources and the environment in the process. Most of the hilltribes people still cannot under-

stand nor speak Thai and as yet do not feel the need to learn the Thai language. Besides this social problem there is the problem of sanitation as the hilltribes people, living in scattered areas makes the delivery of sanitary services a difficult operation.

To help the hilltribes people, projects must be drawn up through the cooperation of the Government agencies concerned. These projects have to be classified by areas and should include the development of new occupations to replace the growing of poppies, the promotion of modern agricultural methods and cottage industry and the simultaneous development of their education and sanitation. Officials will be sent to show hilltribes people new methods in agriculture. Hilltribes people will also be brought to the agricultural centre in the North to be trained in the use of new agricultural techniques. Livestock raising shall be promoted and market outlets will be provided for cash crops grown by the hilltribes people. In areas where natural resources such as forests and streams are already destroyed or polluted, trees have to be planted and new villages should be set up under a comprehensive settlement scheme. Land ownership rights have to be given to the hilltribes people to give them moral support and confidence and to make them feel a part of Thai society. Government agencies shall give financial and technical support to initiate the setting up of co-operatives for the hilltribes people so that they can learn how to support one another in their own group.

(6) Slum-dwellers. The Bangkok metropolitan area has about 300 slum areas with approximately 800,000 inhabitants. About 650,000 of these slum dwellers are simply trespassers with no land ownership right. Most of them are to be found in the Klong Toey slum area. There are about 150,000 people living in slum areas with no trespassing where they pay low rent to landowners as regulated by the law. There is, however, no plan as yet on how to improve living conditions in these densely populated areas where the average family size is as high as 7.4 persons.

To deal with these problems, strict measures are needed to exercise control over urban construction works and keep them within the town planning regulations to prevent further increases in the number of slum areas. For slum areas that can be cleared dwellers should be moved out to other residential areas with low-cost government housing facilities to offer them a chance of a better life. For other slum areas that cannot be cleared, an improved pattern of the living quarters has to be mapped out and basic amenities have to be amply provided such as public utilities (including water, electricity and garbage collection), sanitation, pawn-shops and cheap consumers cooperatives stores. Moreover, the growth in the number of slum-dwellers will be prevented through measures prohibiting the construction of new living quarters in these areas and issuing house registration numbers to those already living in these areas. In giving aid to these slum-dwellers, the participation of institutions, private foundations and various organizations will be encouraged.

(7) Convicts. Convicts can be classified into four different categories, namely those imprisoned, those detained, those under custody and those undergoing a training. On average, the number of the convicts has increased. The rate of increase has been particularly high during the last five years, averaging above

10 per cent per annum. In 1974 there were 60,803 detainees in state penitentiaries who had to cope with various problems such as the degrading living conditions in overcrowded cells with health standards lower than minimum requirements and inadequate professional training facilities. Moreover, when the detainees are discharged, they have difficulty in adjusting themselves to life outside, resulting in quite a number of them being sent back again to the penitentiaries.

Guidelines to be followed in solving these problems include putting an emphasis on the provision of vocational training facilities for convicts to equip them with necessary vocational skills for their return to society as normal citizens. Conditions of state prisons should be improved to offer more space for living. This can help to check the number of prisoners who attempt to escape or to commit dangerous acts.

4.1.2 Objectives and Plans. Social welfare work consists of four sets of operational plans.

(1) Plan to Prevent Social Problems. This plan aims at preventing low income-earners from getting into more difficulties by extending them welfare assistance during the five-year period in the following ways:—

type of service	no.of cases/persons
– child and family welfare assistance	156,000 cases
– prevention of juvenile delinquency and maintainance of juvenile security	13,000 persons
– community centres activities and subsidies for low-income passengers	1,069,000 persons
– provide jobs for welfare recipients and promotion of professional work	29,000 persons

In addition to these activities, a social security programme will be started through the labour insurance scheme in the Bangkok metropolitan area. This will subsequently be extended to cover eleven neighbouring provinces. The social security system will also cover old people and the disabled.

(2) Plan to Assist People with Specific Problems. The Government will aim at helping these people to help themselves. Targets include the following:—

Target Groups	No. of people
– people suffering from calamities	4,950,000
– people in certain categories	14,000
– the handicapped, the crippled, and the deprived people	13,000
– children and young people	30,000

(3) Development Plan for Hilltribes People. Measures include the execution of full-scale projects in 20 locations per year involving approximately 36,000 hilltribes people per year, or a total number of 180,000 hilltribes people during the Fourth Plan period. Apart from this, all these self-help settlement areas will be improved. Vocational training will be given to 4,000 hilltribes people and 300 monks will be sent to introduce the teachings of Lord Buddha to these people.

(4) Plan to Increase Personnel Efficiency and Encourage Public Participation. To achieve these social welfare targets, 12,000 personnel and volunteers will have to be trained within five years. In addition, 75,000 aid recipients must be trained during this period.

4.2 Recreation Area and Sports Ground

4.2.1 Problems

At present, large towns, particularly the Bangkok Metropolitan area, which has 4.3 million inhabitants within an area of 1,560 sq. km., have few recreational zones. Bangkok now has only six public parks, a figure which includes those which are well maintained as well as some which are still being rehabilitated, namely Lumpini, Thonburirom, Chaturachak, Pranakoru, Klongchan and Saranrom. Besides these six parks, there are 36 minor ones. Altogether, there are 500 rai of park land for a population of 4.3 million people, or about 10 rai of park land per 8,000 people (international standard prescribes an area of 10 rai per 1,000 people) which is inadequate to provide recreational facilities for children, youngsters and the public in general.

Children and young people in urban areas tend to lack the opportunity to obtain physical exercise since there is a shortage of sports facilities. Bangkok at present has less than ten sport stadiums. In provincial areas, some provinces do not have even one stadium that meets the basic standard. As a consequence, youngsters have to use open fields for their physical exercise. Children and youngsters still do not obtain sufficient encouragement and support to foster their interest in sports. Those who are interested in sports are not acquainted with the right standard techniques.

4.2.2 Guidelines and Measures

(1) The Government will effectively enforce the City Planning Act and support the projects of the Bangkok Metropolitan Administration and other agencies responsible for the provision and construction of recreation grounds such as public parks and minor parks, as well as the creation of a pleasant atmosphere in general. Large town will reserve part of its area for recreational purposes. The Government will aim at providing a sufficient amount of recreational services and facilities for the public and will take action to improve public safety and cleanliness in these recreation grounds.

The Government will encourage the construction of public parks in the form of a zoological garden by the Zoological Organization. Such parks will be operated as a state enterprise and should serve as a recreation ground that offers both fun and knowledge. These zoological gardens will also serve as a wildlife preservation area which will help to foster a better public attitude towards animals. This project will be expanded to other large towns in the provincial areas where similar wildlife preservation centres will be established.

(2) The Sports Organization of Thailand should play an important role in the promotion of sports activities by regularly organizing sports tournaments and by providing students and the general public with necessary sports equipment. Sports training centres should also be set up at various locations. Top sportsmen will be encouraged to earn a reputation for the community and the nation as a whole. For example, scholarships will be given to such sportsmen.

(3) The Tourist Organization of Thailand should promote more domestic tourism particularly for the educational benefit of young people. The TOT can operate this project itself or encourage some private groups to undertake the project, which will give people a chance of spending their leisure time usefully. This project should encourage people to appreciate and to preserve the country's natural beauty and historical monuments.

4.2.3 Objectives and Plans. The plans for activities concerning public parks and recreation grounds during the Fourth Plan can be classified as follows:—

(1) **Short-term Plan.** The Bangkok Metropolitan Administration (BMA) will be encouraged to carry out the following schemes:—

(a) Urgently improve the four original public parks in the BMA, namely, Lumpini Park, Snam Luang Park, Thonburirom Park (in Bangmod district) and the public park in Ladkrabang district.

(b) Encourage the planting of small groups of trees and flowers in the outer and inner areas of the BMA.

(c) Encourage the planting and preservation of trees in municipal areas, particularly in the BMA.

(d) Co-operate with the Government and private agencies in preparing public parks.

(e) Provide entertainment for the general public in public parks such as music, small libraries and mobile libraries, particularly in the outer areas.

(2) **Medium-term Plan.** This plan contains the following projects which will be carried out during the Fourth Plan period:—

(a) The Bangkok Metropolitan Administration will invest in Chaturachak Park and convert it into a public park which has a range of amenities to offer the general public.

(b) The Government will support efforts to create at least one public park in each municipal area.

(c) A safari park will be established at Khao Khiew in Chonburi Province.

(3) **Long-Term Plan.** This plan is made up of the following projects:—

(a) The Government will urgently support the creation of public parks in all four corners of the BMA.

(b) Support will be given to the setting up of public and minor parks as well as the provision of entertainment in these areas for various communities in all regions of the country.

(c) Private concerns will be encouraged to construct zoological gardens. However, the Government will supervise such construction to ensure that technical rules and standards are followed.

The following promotional measures for sports activities are to be carried out during the Fourth Plan period.

(i) **In the BMA.** The Bangkok Metropolitan Administration, the Sports Organization of Thailand and the Division of Physical Education will receive Government support in the construction of standard stadia of different types and in the renovation of the existing ones to bring them up to the standard. These stadia are to be used for the training of Thai athletes and sportsmen and for the organizing of sports competitions. The scientific centre for sports promotion project should be approved so that immediate medical treatment can be given to athletes and sportsmen. The centre should help increase the capability of Thai athletes and sportsmen all over the country.

(ii) **In Provincial Areas.** The Government will encourage the Division of Physical Education and the Sports Organization of Thailand to cooperate more closely in organizing sports events and in the construction and renovation of stadia.

The following guidelines have been laid down:—

(1) The Sports Organization of Thailand will construct well-equipped stadia (similar to a regional zone stadium) in provinces where construction ground is readily available and public interest is adequate. The rate of construction will be one stadium a year. Officials in charge of the promotion of sports activities will be sent to different regions and provinces to give training in various sports and to stimulate interest in sports.

(2) The Division of Physical Education will renovate the existing provincial stadia by proceeding according to set priorities and in conjunction with the projects of the Sports Organization of Thailand.

(3) Each Provincial Administrative Organization will be given the responsibility of repairing and maintaining the standard of their respective provincial stadium or regional stadium.

5. Labour Welfare

In the second part of chapter 5 on population, manpower, employment and wages, emphasis was placed on the necessity of creating "peace in the labour movement" in order to promote investment and increase the level of employment in the country. In this part of the Plan, reference will be made to the problems and obstacles regarding labour welfare, including the presentation of appropriate guidelines and measures to deal with labour problems.

5.1 Labour Problems. The major problems can be described under the following headings:—

5.1.1 Work Conditions and Security

The number of workers in the private sector has increased to 2.7 million people, equivalent to 13.6 per cent of the total labour force. These wage-earners are mostly employed in 70,000 - odd small firms all over the country, each having no more than ten employees. Besides receiving only scanty daily wages or wages based on the amount of output, these employees have to put up with long working hours with hardly any days off or holidays. Furthermore, they receive no other welfare benefits or security besides their wages which are raised only when the employers feel like doing so and without any set rules. Employees working in quite a number of firms have to cope with dangerous working conditions that can cause illness or accident, or produce poisonous substances due to a lack of preventive knowledge on the part of the employers. When accidents happen, these employers mostly refrain from reporting them to the authorities and from paying any compensating costs as regulated by law. There are about 1,055 private medium-sized firms in the Bangkok area that employ between 50 to 500 people. These firms employ a total of approximately 132,065 people mostly in the capital area. Employees of these firms are not treated any better than those in smaller firms.

Large private concerns employing more than 500 people each, number about 95 in total in the Bangkok area. They provide employment for 133,509 people. Half of these employees are hired on a daily or hourly basis. These concerns have started to become interested in labour relations problems and have appointed personnel officers to deal with these matters particularly in the last few years. Most of them have been strictly observing the minimum standard required in the Labour Protection Act with regard to working hours, days off and wage levels. Several of these companies even offer additional welfare benefits over and above those required by law.

The shortage of labour officers whose duty is to carry out periodic checks on factories for the protection of employees is a major problem at present. This shortage is quite dramatic when compared with Thailand's neighbouring countries.

On average these countries use one labour officer for the supervision of 200 companies while the ratio for Thailand is one officer for 1,400 companies. In Thailand, therefore, the labour-relations control of companies has been done irregularly and only covers one-third of the medium and larger companies.

5.1.2 Workers Compensation Fund

During the Third Plan period, the number of workers receiving dangerous accidents while working has gradually increased from 500 cases in 1971 to more than 5,000 cases in 1975. The total amount of compensation funds paid out to these unfortunate workers has increased to 25 million baht in 1975. This compensation fund arrangement failed to reduce the number of accidents during work since it did not touch at the root of the problem. Moreover, it was the cause of various conflicts and judicial processes between the employers and the Government who had to force the former to pay compensation.

Due to these reasons, the Government decided to set up a Workers' Compensation Fund within the Labour Department in 1974. Employers are required to contribute to this fund to provide accident insurance for their employees. The Government gives supplementary subsidy and bears the whole administrative cost of this fund. This new arrangement solved some problems concerning the certainty and rapidity in extending compensation and in forging a better relationship between employers and employees. However, it still has a limited coverage extending only to companies with more than 20 employees each in the Bangkok region and five other provinces surrounding Bangkok. Most of the workers are as yet left out of this system which still has to cope with the following major problems.—

(1) Some employees do not correctly understand this system and think that they are unfairly treated by having to contribute to this fund on their own without any Government subsidy. In fact, the Government bears all administrative costs of this fund.

(2) There is a shortage of operational officers.

(3) The prevention of accidents has not received adequate attention in this system.

(4) This fund is saddled with a large reserve which is left over after all compensation has already been paid out.

5.1.3 Labour Relations

Labour demands and strikes clearly emerged as a real problem by the end of 1973. There were in total 501 cases of labour disputes in that year, followed by 357 cases in 1974 and 241 cases in 1975. More than one million work-days were lost in these disputes which came after 17 relatively peaceful years with only 219 cases of labour unrest in between.

With the rising price level, most of the demands by employees during the period 1973–1974 were for higher wages and cost of living compensation. The employees of certain important state enterprises have also joined in expressing the demand for welfare benefits, job security and a better administration. Employees from different institutions have joined forces in establishing their own associations and trade unions which have an influential hand in subsequent labour protests or strikes. This polarization of partners in labour conflicts could produce negative effects on the nation's economy and stability. To prevent this, it is necessary for every party involved, namely the Government, the employers and employees to work together to solve the problems.

5.1.4 Job-placement Service

As already mentioned in the chapter on population, manpower, employment and wages, there was a considerable migration of labour force into urban areas during the Third Plan period in search for jobs. This inflow was the cause of many urban problems, especially open unemployment. Job-placement agencies operated by the Government in the Bangkok area and in the principal towns in the provincial areas are rather limited in number. These agencies are also operated within a limited scope. These agencies should be improved and transformed into a real meeting place where the demand for and the supply of labour are matched. This must be done effectively to gain the confidence of both job-seekers and employers. Private job-finding agencies are scattered across the country, but have not contributed adequately to the matching of the demand for and the supply of labour. A large number of these private agencies were illegally established and interested only in earning commission fees without being concerned with the security aspect for both employers and employees.

5.2 Guidelines and Measures

5.2.1 Work Conditions and Security

(1) The number of officers and equipment used in the supervision of companies will be increased so that one officer will not have to supervise over more than 300 companies.

(2) Security standards for factories will be studied and adapted to suit local conditions and then introduced to companies concerned to prevent danger arising from working with machines, poisonous substances or unhealthy work conditions.

(3) The Labour Protection Act is to be revised to reflect the real situation and the needs of the country.

5.2.2 Improvement of Workers Compensation Fund

(1) The administrative and service staff will be expanded to improve the public relations work and create a better understanding of employees and employers in this project.

(2) This fund is to be allowed to cover more provinces, and to include firms with less than 20 employees, especially those with dangerous working conditions.

(3) The National Executive Council Announcement No. 103 should be revised to make the use of reserves more flexible, for example, to finance the prevention of accidents in factories.

(4) Preparations for the introduction of social security measures into other fields should be made. The setting up of a national social security fund will be considered during the Fourth Plan period. Various agencies operating in similar fields will be integrated.

5.2.3 Labour Relations

(1) **Revision of Labour Act.** All three parties namely, the Government, the employers, and the employees should work closely with one another from the start in the revision of the Labour Act. The revised Act should mention in detail the punitive clauses for those who break the law.

(2) **Labour court.** A labour court to settle labour disputes in a just manner will be established within a short period of time. In the meantime, the Labour Relations Committee should continue with its present role with extended authority. However, when the labour court comes into existence, this Committee will only have the negotiating task in labour disputes. Should this negotiation fail to lead to an agreement, the labour court would step in to produce the ultimate judgement.

(3) **Institution for the Promotion of Labour Relations.** This labour institution project will be considered and implemented within this Plan period in order to alleviate labour problems in the long run. In the meanwhile, the Labour Department will act as a co-ordinator in organizing meetings between the employees and employers to discuss labour relations work and problems. This latter undertaking should help considerably to mitigate labour problems in the short run.

(4) **Education and Training Facilities** will be provided to the workers to teach them their rights and duties according to the Labour Act. Efforts to create workers assembly and employers assembly that are well united and have read negotiating authority will be encouraged. Both measures should make the workers conscious of their responsibilities towards economic and social development of the country and should help prevent unnecessary disputes between workers and employers.

5.2.4 Vocational and Skill Training

(1) Policies relating to short-term training courses for those out of school will be laid down clearly during the Fourth Plan period. There will be only one single unit responsible for the administration of training policies and the coordination of various training courses which will aim at employment-oriented training.

(2) Training courses to raise the level of skills and to teach basic skills will be promoted and expanded into provincial areas.

(3) The Government should not be the sole producer of manpower for the private sector. The latter should be encouraged to create a manpower development system for its own use by providing training facilities in the form of apprenticeship programmes. The Government will establish certain principles and maintain strict control to ensure that participation by the private sector will, to the extent possible, lead to maximum social benefits.

(4) The skill levels of Thai craftsmen in various fields should be standardized and upgraded to bring them on par with international standards.

5.2.5 Job Placement and Labour Market Information Services

(1) Information and analysis regarding such topics of interest to workers as unemployment, labour market, wage rates and work conditions should be provided on time and consistently.

(2) Registration of the employed and the unemployed should speedily be put into practice in every province.

(3) The Government job-placement agencies should be structurally improved to make them a real meeting place for job seekers and employers. These agencies must be able to collect a sufficient amount of up-to-date information on labour market and provide them to job-seekers, employers and every educational institution.

(4) The number of job-placement agencies in areas with expanding industries and at centres of the communications network should be expanded to provide sufficient information and guidance to those looking for jobs. These agencies will be encouraged to provide short orientation courses to teach the unemployed some basic working techniques and how to adapt to living conditions in large towns.

(5) Private and government job-placement agencies should be supervised to prevent their operations from falling below a required standard. They should be aided technically and in organizing some additional training courses. This supervision should gain them trust from both the employees and employers which should help to facilitate the Government employment policy.

5.3 Objectives and Plans

The following plans are drawn up for the purpose of creating social justice by expanding the volume of employment and for providing job security and labour welfare during the Fourth Plan:—

- (1) Labour development plan
- (2) Management development and employees training plan
- (3) Job placement and guidance plan
- (4) Labour standardization plan
- (5) Compensation fund plan
- (6) Labour relations plan
- (7) Employment of foreigners plan
- (8) Labour fact-finding study plan

Each plan consists of various urgent work plans and projects directed towards the following purposes and objectives.

5.3.1 Labour Development Plan aims at raising the efficiency of the prospective entrants into the labour market and the level of skills of those already working. Projects to upgrade labour skills will be extended both in the provincial and the central areas. For the central areas, the capacity of the Institutes for Skill Development at Din Daeng and the That-thong Temple will be expanded to enrol up to 27,500 trainees. For provincial areas, three new institutes will be constructed during the Plan period with the capacity to enroll 13,800 trainees.

5.3.2 Job Placement and Guidance Plan consists of the expansion of government job-placement agencies in terms of placement services, job guidance and the distribution of labour market information in the central as well as in the provincial areas. In the latter areas 70 more placement agencies will be set up. The target is to find employment for about 280, 600 people.

5.3.3 Compensation Fund and Labour Relations Plans. The requirement of accident insurance for employees of firms with more than 10 employees will be enforced for 10,600 firms and expanded to cover another 3,490 firms in the provinces. This insurance is to be managed in the form of a compensation fund which will improve workers' security in case of accident or in case of illness arising from working conditions and will quicken the payment of compensation in accordance with the degree of graveness of the misfortune. Labour relations will be improved by the modification of the Labour Relations Act and by the encouragement of workers' participation in consultation groups and negotiations with the company's management. These modification are expected to help resolve about 1,325 cases of labour disputes and strikes and 2,575 cases of disagreement between employers and employees.

CHAPTER VIII

SOCIAL DEVELOPMENT

Economic development in the past which was accompanied by industrial development has brought about some changes in the basically agricultural structure of the country. Urban areas have rapidly grown in size and have attracted considerable inflows of migrants from rural areas. These changes have in turn affected the social structure and have created a number of new social problems which have become more serious over time. These problems will become the major obstacles to the national development effort in the future.

Social development programmes directed mainly at the creation of social stability and the promotion of a more meaningful role for youth and women in the economic development process are therefore given particular attention in the Fourth Plan. The essential theme of the social development plan is the extensive involvement of people in every phase of the social and economic development process. The benefits generated by this development process must be shared by every region of the country and measures to promote a more equitable distribution of the national income among various regions will be adopted. Social stability must be maintained in times of rapid economic growth and the social climate has to be conducive for economic growth as well.

Social problems and obstacles which are considered crucial enough to be taken up and dealt with in the Fourth Plan are as follow :—

(1) **Problems Relating to Drug Addicts.** Sudden changes in the social and economic structure have brought about insecurity in family life which is a major reason why children and youngsters have had to turn to all kinds of vice. Young drug addicts in particular are becoming a menacing social problem.

(2) **Problems Relating to Decadence in the Arts, Culture and Religion.** With economic growth, a more materialistic society has emerged and this has affected the cultural and religious behaviour of the population.

(3) **Problems Relating to the Protection of Life and Property.** Most of these problems arise as a result of the occurrence of crimes, accidents, public disasters and from the consumption of certain products.

(4) **Problems Relating to the Role of Women.** Women still have not been sufficiently encouraged to take up their rightful place in the process of social and economic development.

(5) **Problems Relating to Children and Young People.** This group, which will become the nation's manpower in the near future, is adversely affected by sudden changes in the social and economic structure.

All these problems are to be urgently tackled during the Fourth Plan period in order to create more social stability.

1. Problems Relating Drug Addicts

1.1 Current Situation and Main Problems

When the Government put a ban on opium-smoking and closed down all opium-smoking dens and burnt opium pipes at the Pra-mane Grounds on January 1, 1959, there were about 79,540 opium-addicts, according to a survey at the time. Since then, opium has been replaced by heroin. Various surveys carried out by a number of committees and a report of the World Health Organization indicate that there are about 600,000 drug addicts in Thailand and about 60 to 70 per cent of this total consists of young people between 16 and 24 years of age.

These statistics clearly indicate that drug problems are a national concern and should be dealt with urgently. In addition to the misdirection of funds to the tune of 10,800 million baht a year to buy heroin, drug addicts are partly responsible for the rise in crime rates and are unproductive components of the nation's human resources.

1.2 Guidelines and Measures

Although capital punishment and long prison terms have been meted out by the Government to producers of these drugs and to drug traffickers, clandestine trade in drugs still persists. The following preventive measures have been emphasised in the Fourth Plan :-

1.2.1 Prevention

(1) Health education will be intensively provided and information on the dangers of drug usage and preventive methods will be widely diffused. Parents and teachers organizations should be established especially for these purposes.

(2) The mental health of the population should be improved as a preventive measure against the taking of drugs. This is to be done by giving mental health education to all public health agencies and to the public in general.

1.2.2 Suppression

(1) The influential people backing drug producers and drug pushers must be effectively dealt with. Suppression work is hampered most by the involvement of certain suppression officers who have vested interests in these clandestine activities.

(2) Suppression forces should receive adequate support in terms of equipment and vehicles to enable members of the police force to operate with greater efficiency. The intelligence system should be improved to function reliably and speedily.

1.2.3 Rehabilitation

(1) More rehabilitation clinics are to be established to help cure drug addicts.

(2) Methadone clinics are to be set up in the long run to help cure the addicts who cannot be treated with other methods.

(3) Rehabilitation treatment in which patients are given every encouragement is to be recommended in the process whereby patients gradually give up their drug-taking habits.

(4) The patients should be persuaded to take up conversational therapy and to develop interests in individual relationships and group activities.

(5) Vocational training will be provided in conjunction with mental therapy.

1.2.4 Supporting the Cultivation of Substitute Crops. Since heroin originates from opium, drug problems can only be solved if the hilltribes in Northern Thailand can be persuaded to stop growing poppy. Permanent settlements at appropriate cultivation locations will be prepared for the hilltribes to stop their shifting cultivation and to induce them to grow legal cash crops instead of poppy. Market outlets for these crops must also be provided.

1.2.5 Co-ordination. The operations to combat drug problems have to be well planned and closely coordinated among various agencies concerned for the actions to be successful. A planning and coordinating committee will have to be formed consisting of representatives from various government units and volunteer organizations. This committee will have its own office and will have responsibility for coordinating units involved and for speeding up the suppression work of the responsible units.

1.3 Objectives and Plans

In order to successfully prevent and solve drug problems within the time span of Fourth Plans the following objectives and plans are to be used :-

1.3.1 Prevention and Rehabilitation Plans. To prevent the number of drug addicts from increasing during the Fourth Plan, the following measures are to be applied by the Ministry of Public Health and the Bangkok Metropolitan Administration :—

- (1) Rehabilitation treatment will be given to a total number of about 104,000 patients.
- (2) Methadone treatment will be given to 511,000 patients a day.
- (3) One hundred information centres will be set up.
- (4) Youth centres and half-way house are to be used as rest homes for patients to recuperate after treatment.

1.3.2 Plans for Substitute Crops. The areas where the hilltribes people live (291,133 hilltribes people with 62,132 rai of poppy fields and 350,444 rai of other crops covering 13 provinces) will be divided into 210 zones. Each year, twenty zones with about 34,000 people will be designated as a 'development area'. In each development area, land will be allocated to three types of cultivation, namely, paddy cultivation, rotating crops and fruit trees, and forest planting. In this way, poppy fields can be reduced in size by 50 per cent by the end of the Fourth Plan period.

1.3.3 Prevention and Suppression Plans. Definite objectives and projects are to be jointly determined by the Ministry of Interior and the Ministry of Education to make drug prevention and suppression measures more extensive and effective.

2. The Arts, Culture and Religion

2.1 Art and Culture

2.1.1 Current Situation and Main Problems

(1) Thailand has its own cultural and artistic identity inherited from ancient predecessors. Thai culture is reflected through old traditions, language, dress and works of art as can be seen everywhere. Nowadays, with rapid economic and social growth, traditional culture has undergone significant changes. Traditional Thai culture is now less prominent than it used to be and international ways have been adopted more and more.

(2) Beautiful works of art that show the country's cultural identity architecturally, sculpturally and in paintings can still be seen in the form of the temples, Buddha images, ancient relics and historical monuments. However, many of these works of art have been destroyed.

(3) The political awakening of the younger generation steered young people away from traditional values towards modern ways of thinking and new political movements. This has been reflected in their demand for equal rights and social justice and through musical expression and literature praising new ways of life in the new society. This exposure to new values and attitudes led young people away from the traditional Thai culture.

(4) A national policy and plan for art and culture does not exist and a shortage of high-ranking officials responsible for this task has made things worse. Agencies concerned with art and cultural affairs are scattered in various departments, each operating on its own.

(5) The propagation and distribution of knowledge and information to cultivate the love for Thai traditional art and culture has been inadequate and failed to reach the majority of the population, particularly young people. With a lack of knowledge and understanding of their own cultural heritage, they tend to be receptive to alien forms of art and culture which are accepted without any adaptation to Thai society.

2.1.2 Guidelines and Measures

(1) Public relations work will be expanded to adequately provide pupils, students and other people with essential knowledge and information on Thai art and culture to let them understand the importance of this heritage. Cultural information centres will be set up in Bangkok as well as in provincial areas to reach as many people as possible. Educational institutions will be encouraged to function as cultural centres in organizing cultural activities for students and the public in general and in distributing cultural information.

(2) Cultural activities should be organized on auspicious days for pupils, students, and the general public to commemorate and participate, such as the completion of restoration work of some historical place or monument. These activities can bring people closer to their own art and culture and should be extensively organized with the co-operation of various organizations.

(3) Relevant agencies should formulate plans to preserve national art and cultural treasures. These plans will function as guidelines for other units involved in the implementation of the national art and culture policy.

2.2 Religion

2.2.1 Current Situation and Main Problems

(1) Religious involvement is an integral part of the daily life for the majority of the Thai people, particularly in rural areas. In the past, religious teachings

provided guidelines for daily living, and permeated through the social system, national tradition and culture. Thai society in former times had sought refuge in the teachings of Lord Buddha to strengthen national unity and to preserve national identity. The Buddhist temples played a significant role in this process and were the origin of a major part of Thai art and culture.

Buddhism is the principal religion in the country with 93 per cent of the population being Buddhist. Other religions are also practiced in Thailand, such as Muslim, Catholicism, and Protestantism. As Buddhist principles are not restrictive, there have been very few religious conflicts. The main problem concerns the preservation of orderliness and the improvement of the governing system within the organization of Buddhism itself.

(2) High rates of economic growth coupled with the population explosion and the advancement in the communication system have led to various social and spiritual changes. With growing materialism, religious values have been adversely affected and the role of temples as spiritual centres is now less prominent. People use religion as a means for acquiring more earnings by looting temples and stealing invaluable religious symbols. These are urgent problems that must be dealt with to preserve the national religion and culture.

(3) The restoration of temples and religious places has been carried out without any systematic plan or limitation, depending only on the urge and will of each group of individuals. Some of these efforts to preserve religious artefacts have been less than satisfactory and could be considered a wasteful use of charity funds obtained from faithful Buddhists. Numerous temples have been constructed with an apparently materialistic rather than a spiritual aim. Some villages have so many Buddhist temples that the villagers are not able to support and maintain them all. These temples ultimately become deserted and left in a state of decay. According to a survey, out of a total number of 25,695 temples in Thailand, 21,670 are deserted temples. The rest is a far from being well-kept or maintained as pure and blissful centres of spiritual peace and development. This is not in line with the original intentions of the contributors and represents a wasteful use of charity funds.

(4) Agencies and organizations involved in religious affairs do not co-operate with one another sufficiently in their operations and planning to preserve and improve religious activities. These activities should take into account social circumstances in the most appropriate way possible, for instance, the regulations regarding the monks' activities, the construction of temples and the soliciting of contributions.

2.2.2 Guidelines and Measures

The following guidelines and measures are recommended in dealing with the above problems:—

(1) Disciplinary regulations for monks should be made as strict as present circumstances will allow. The rules and methods used in selecting those who may enter monkhood should be made more rigorous.

(2) Guidelines, regulations and style regarding the restoration and construction of temples and religious institutions should be in line with the requirements of Thai society and consistent with aims to keep these institutions as religious symbols and for preserving national identity.

(3) Temples of every religion to the extent possible will be developed as sacred places of refuge for those seeking spiritual peace. At the same time, these temples will be developed as places to preserve traditional Thai art and culture,

(4) To increase the monks' religious knowledge and to improve the propagation of Buddhist teachings, the monks' education in Buddhism should be improved and better organized. The propagation of Buddhist principles should be done correctly and in harmony with local conditions to cultivate a better understanding of religious culture among young people in Thailand.

(5) Measures should be applied to prevent people from using religious activities for their own benefit and from disturbing the serene atmosphere in temple grounds. Regulations and laws controlling these activities should be revised and improved.

(6) Support is also to be extended to other religious (for example, Islam) as well, particularly in the propagation of religious teachings. This should help people to learn the correct principles of other religions and thereby create a better understanding among people with different religious beliefs.

3. Protection of Life and Property

One of the important objectives of social and economic development is to provide adequate protection of life and property. As such, problems relating to crime, accidents, public disasters, consumer's welfare and environmental pollution must be dealt with urgently.

3.1 Serious Crimes

3.1.1 Current Situation. According to the statistics of the Police Department, the average annual crime rate during the last nine years (1967–1975) amounted to 2,000 cases per 100,000 people. There is a tendency for this rate to rise over time. On average, the number of those imprisoned has increased by 3,000 to 4,000 per year.

3.1.2 Problems. The main causes of this problem can be summarized as follow :—

(1) The economic recession, the rising cost of living and fewer employment opportunities have forced many people into using illegal means to earn a living.

(2) So far, no efficient plan for dealing with crime prevention and suppression has been formulated. In addition, there have been some shortcomings in police operations.

3.1.3 Guidelines and Measures. Prevention and suppression measures covering both the short and long-term are needed to combat crimes successfully.

(1) Suppression of Crimes. Members of crime suppression forces must perform their duties with integrity and honesty. Strong measures should be applied to those who fail to do this. Planning future operations and evaluation of past results should be included as part of the duty of these forces. The police force thus must be expanded in terms of manpower and equipment to cope with a wider range of duties and an increasing population size. This is necessary particularly for rural and urban areas with high crime rates.

(2) Prevention of Crimes. Social and economic measures are needed for crime prevention. The salaries of officers in charge of crime prevention, for example, should be increased.

(3) Objectives and Plans

(a) Plans to Train and Expand Manpower

Suppression forces especially in problem areas in the central region and in remote rural areas will be expanded. Approximately 15,000 new recruits will be incorporated into the police force during the Fourth Plan period. To increase operational efficiency, police officers in the field as well as administrative officers will receive special training. Inefficient members of the forces should be considered for discharge from government service.

(b) Plans to Raise Suppression Capacity

The problem of inadequate suppression capacity will not be allowed to worsen. Improvement in the situation will be brought about through projects such as consolidated patrol network, specialized suppression units, provincial special suppression units and centres for crime prevention and suppression.

(c) Public Relations Plan

The following projects will be carried out within a short period of time, namely, the setting up of crime-fighting volunteer groups, exhibitions of weapons, explosives and drugs, exhibitions on the prevention of traffic accidents, fires and public disasters, and the participation in the maintenance of law and order.

(d) Plans on Supportive Measures

Regional statistical centres will be set up to collect local data on crimes, along with crime suppression centres. The nature and problems regarding crimes are to be given a careful study.

3.2 Accidents and Public Disasters

3.2.1 Current Situation and Problems. Urban and industrial development have been accompanied by a number of accidents which increasingly causes loss of property and lives. In the Fourth Plan, the prevention of traffic accidents, public disasters and accidents in factories will be given special attention.

(1) **Traffic Accidents**, both on land and on water, are mainly results of a lack of understanding and ignorance of traffic rules and lack of experience. Traffic information and education are inadequately provided to the people. As a result, traffic laws are broken quite often.

(2) **Public Disasters** that occur are mostly fire outbreaks which during 1971-1975 caused the death of 105 people per annum and wounded 175 people a year besides causing property damages equivalent to about 711 million baht in the Central region alone. In the provinces, fire outbreaks caused the death of 92 people per annum and wounded 150 people a year and caused damages to property valued at approximately 1,071 million baht.

(3) **Accidents in Factories** have been increasing in number year after year and the number of those involved in these accidents has also increased. This shows that the system of work and the machinery used are not up to safety standard. Employers do not as yet feel the need for safety precautions as they are not interested in safe working conditions. They do not fully realize the magnitude of costs arising from the loss of employees through factory accidents. From January 1974 to September 1975, the number of those injured in factory accidents increased by 37.6 per cent. The largest increase (1,000 per cent) was recorded in electricity and gas factories. The second largest increase, of 40.7 per cent was recorded in the construction industry.

3.2.2 Guidelines and Measures

(1) The following measures are required for improving traffic conditions :—

(a) Traffic education on the safe use of streets and canals should be widely given, both through the mass media and by including this as a choice subject in the curricula for primary and secondary education.

(b) Agencies involved with traffic should get together and design roads so that they are as safe as possible for users.

(c) A co-ordinating unit comprising representatives from the Traffic Police Division, Highways Department and other relevant agencies will be created to look into road accidents. A rescue operation unit will also be established.

(d) Traffic laws and regulations will be revised and modified to eliminate the existing shortcomings particularly with respect to punishment for the violators of the traffic law.

(e) Driving licenses should be issued only after the driver passes a driving test.

(2) For Public Disasters such as fire outbreaks, studies should be carried out to determine the causes of fires and to recommend fire-prevention methods. The law regarding the punishment of arsonists must be revised and applied more strictly.

(3) Accidents in Factories can be effectively prevented by the modification and enforcement of the laws regulating factories and the installation of protective devices against accidents. At the same time, the accident compensation fund for workers which is already being operated by the Ministry of the Interior will be improved and expanded. The prevention of accidents at work will be given high priority.

3.3 Consumer Protection

At present, consumer goods, particularly foodstuff, are sometimes mixed with poisonous substances such as dye and certain chemical substances. Furthermore, ready-made foodstuff and other consumer goods are often of low quality and are often produced unhygienically such as, the production of soy sauce from animal bones with the addition of some other ingredients to make it taste like genuine soy sauce, the production of canned foods which are not properly inspected, and the use of containers that can become poisonous. The production of medicine, cosmetics and other goods that can be dangerous to the health of unwary users, had been left uncontrolled. For the consumer's sake, the Government must modify and improve the law and regulations on factory supervision.

4. Woman's Role in National Development

4.1 Current Situation

At present, women make up half of the entire population of the country. There are about eleven million women in the country's labour force (aged 15 years and

more). Still, women's rights remain far inferior to that of men in social, economic, and political terms. In order to encourage women's participation in the social and economic development process to the fullest extent, it is necessary to upgrade women's skills and their status in society.

4.2 Problems

4.2.1 As a whole, the Government provides education for boys and girls without discrimination. However, under present circumstances, boys have more educational opportunities particularly in poor families, than girls. According to a survey carried out in 1970, it was found that the illiteracy rate among women was 25.2 per cent which was significantly higher than the illiteracy rate of 11.1 per cent for men.

4.2.2 Although by law, men and women have equal rights with respect to occupation and pay, in practice, (according to a survey) it appears that women are discriminated against in terms of professional advancement and in terms of salaries.

4.3 Guidelines and Measures

The following guidelines are to be used in creating a more meaningful role for women in the social and economic development process :-

4.3.1 Educational Measures

(1) Follow-up study courses are to be organized for women in rural areas to enable them to participate more ably and with more responsibilities in local development activities.

(2) Out-of-school education that will be provided for women will emphasise the equality principle which will be applied to men and women (Ministry of Education, State Universities Department).

4.3.2 Economic and Occupational Measures

(1) Men and women will be given equal chances for promotion in government service and the number of female staff will be increased. Measures will be applied to ensure equal pay and security for men and women.

(2) Government agencies and private institutions will be encouraged to co-operate in organizing training courses for women in order to enhance their skills in accordance with local needs.

4.3.3 Revisions and Modifications of Laws

(1) Laws that prevent a fair and equal treatment of women are to be revised and modified, including legislation to protect female workers in various occupations.

(2) Criminal punishment will be made more severe and suppression will be intensified for those who force or lure women into illegal occupations.

4.4. Objectives and Plans

4.4.1 Short-Term Plans

(1) Training courses for women are to be organized in community development areas in 70 provinces on food and nutrition, cottage industry, family development in agricultural society, the forming of groups and family planning. The following targets have been set for the Fourth Plan :—

(a) Basic training will be given to 1,400 groups or 42,000 people.

(b) Follow-up education will be given to 1,900 groups or 18,900 people.

(c) Vocational training will be given to 710 groups or 26,300 people.

(2) Young girls will be given a better education and will learn skills for future vocations. Targets which have been set are as follows:—

(a) Provision of intensive training courses for young girls: 25 groups for 1,250 people.

(b) Provision of short training courses for young girls: 17 groups for 3,350 people.

(c) Provision of training in special activities: 15 groups.

4.4.2 Medium-and Long-Term Plans. To achieve the above mentioned objectives relating to the development of the role of women, the National Economic and Social Development Board will co-operate with the Committee on Women and Child Development which is going to be set up by the Government in formulating medium and long term plans.

5. Child and Youth Development

5.1 Current Situation

Since children and young people will one day become the essential human manpower for national development, it is vitally important to plan their development ahead of time. Thailand at present has 27 million children and young people (under 24 years) which represents about 50 per cent of the total population. These children and young people can be classified as follows:—

5.1.1 Children at Pre-school-Age (under 6 years) number about 10 million. Considering the fact that 55,000 children at this age died from undernourishment in 1974, it is obvious that the Government's public health care service must be made more effective. Apart from this health hazard, these children also receive inadequate schooling, as only 0.18 per cent of a total 4 million pre-school-age children have the chance to receive kindergarten and pre-kindergarten education.

5.1.2 Children at School-age can be further sub-divided into the following groups.—

(1) Out of 17 million children at school-age (aged between 7–24 years), only eight million children or 40 per cent of the total receive formal education. For the other 9 million children, only 0.27 million can resort to out-of-school education.

(2) From the 1970 population census, it appears that about 31 per cent of young people aged between 7 to 13 years remained out of school. This percentage increased to 87 for the age cohort of 14 to 19 years, and to 96 for the age cohort of 20 to 24 years.

5.2 Problems

5.2.1 Children at Pre-school-Age. who have problems come mostly from poor families living in slums or remote rural areas. The major problem here concerns the lack of nutrition and health care.

5.2.2 Children in School. These children are not educated to understand basic vocational techniques and the essential means to earn their livelihood since formal education as yet has not been adapted to fit in with local conditions and needs.

5.2.3 Young People Outside the Schooling System. There are various problems concerning young people who have not been absorbed into the schooling system. With insufficient vocational knowledge and skill, and no opportunity to acquire any form of training, these young people are not able to find gainful employment. Problems of unemployment, housing shortage, and crime are aggravated by the increasing inflow of young people into large towns looking for out-of-school education and jobs. These young people who manage to find employment receive unjust and low wages and have to work under gruesome conditions. In addition, many young people below the minimum employment age have to work instead of attending school to survive. This can be detrimental to both their physical and mental development.

5.3 Guidelines and Measures

5.3.1 Children at Pre-school Age

(1) The provision of food for children at pre-school-age particularly those living in slums and remote rural areas will be expanded. The Government will

subsidize local production and distribution of food enriched with protein and energy to help prevent child illnesses due to a lack of protein and energy.

(2) Preventive measures against illness such as the provision of health education, health care, and medical treatment for pregnant women, mothers with infants, babies and children at pre-school-age will be expanded and improved. Health care services for families living in squatter settlements and rural areas will receive special attention.

5.3.2 Children in School

(1) Courses in health education and social environment will be developed as rapidly as possible. These children will be educated on social changes and the role of youth within the Thai cultural order.

(2) Schooling curricula will be improved so that children learn things that will be of practical value in their life and career.

5.3.3 Young People Outside the Schooling System

(1) Sufficient facilities for adult education, vocational training in agricultural, industrial, and commercial occupations and in handicrafts, should be provided for young people who have not received adequate schooling and are currently jobless.

(2) Job creation will be accelerated along with the expansion of educational opportunities and training facilities for agricultural, industrial, and commercial occupations and for handicrafts in provincial areas. Job-placement services both in Bangkok and in provincial areas will be improved and expanded.

(3) The Government will help provide basic welfare services to children who have not received any schooling and welfare aid will be given to poor children. The responsible agencies will ensure that these children are treated properly in accordance with the Labour Act.

5.4 Objectives and Plans

The following is a brief description of the work plans which aim at developing the individual ability of young people:—

5.4.1 An agency will be established to provide services for young people and to produce and distribute enriched food to infants. At the same time, knowledge on nutrition matters will be imparted to mothers. This agency will help to develop the personality and behaviour of youth by cultivating their sensibilities with respect to unity and Thai traditions and by encouraging these people to make themselves useful to society.

5.4.2 The correct attitudes of the young people will have to be developed in terms of culture and moral democracy, discipline, law abiding habit and adaptability to society.

5.4.3 To enable young people to spend their free time usefully and to make useful contributions to their own community, they will be given agricultural training in order that they may have gainful occupation in the future.

5.4.4 The organization of young people into groups such as the Boy Scouts and the Junior Red-Cross Workers will be given every support. Support will also be given to projects concerned with the training of Boy Scouts, the upgrading of the activities of the Boy Scouts, and training programmes for girls between the ages of 8 and 16 years so that they can contribute more to social development and to the creation of more rural occupations.

PART FOUR
INVESTMENT PROGRAMMES

PART FOUR

EXPLANATORY REMARKS

Development Projects

Salient features of development projects of the Fourth Plan including envisaged budget allocations by projects are summarized and presented in this Part of the Plan document. These projects are classified according to the key development strategies of the Plan as presented in Part Three. This type of presentation provides easy reference to the likely magnitude of public development expenditures directly related to the key development issues of the Fourth Plan and complements the sectoral classification of envisaged development expenditures as presented in Part Two on Planned Development Expenditures and its Financing.

To provide a clearer view of the structure of the development expenditure allocation, a distinction is made between on going projects and work plans that began during the Third Plan period and new projects. The estimated costs and targets of each particular project will be presented in more detail in future documents. This is mainly because most of the new projects in the Fourth Plan at present are in the early stages of the project cycle and require further preparation and consideration. Moreover, a significant amount of the total development expenditure of the Fourth Plan will be reserved for new essential projects which have not yet been proposed by government agencies. In this connection, the Office of the National Economic and Social Development Board will request various government agencies to prepare additional projects for possible inclusion in the Plan.

The allocation of development expenditure classified according to key development issues as shown in Part Four here is intended primarily to indicate the Plan size and preliminary ordering of priorities of various work plans and projects. Actual commitments and disbursements from the Government budget and from foreign loans and grants on the other hand, will be compiled in the annual plans in accordance with the annual budget appropriations.

The total expenditure requirement for the work plans and development projects listed in Part Four here amounts to 252,450 million baht. This amount can be divided into three component parts in terms of expenditures for on-going projects (176,175 million baht), for new projects (70,990 million baht) and for additional projects which will be formulated during the course of the Fourth Plan. The part of the salary increase for government officials that has been classified under development expenditure is also included in this third component part of total development expenditure. More details of this allocation of development expenditure classified by key development issues are shown in the following table:—

Estimated Expenditure On-going Projects and New Projects Classified by Key Development Strategies

(Unit: Million baht)

Key Development Strategies	Budget		Foreign Loan		Foreign Grant		State Enterprises and Local Government Revenue		Total	
	On-going Projects	New Projects	On-going Projects	New Projects	On-going Projects	New Projects	On-going Projects	New Projects	Estimated Expenditure	Ratio
1. Development and Conservation of Economic and Environmental Resources	14,755	1,800		335	75	125	150	-	17,240	6.8
2. Promoting Income distribution and Raising Productivity in Rural Areas	21,520	8,240	435	3,980	265	285	300	-	35,025	14.0
3. Industrial Development	695	1,600	-	455	25	15	215	-	3,005	1.2
4. Exports, Imports and Tourist Promotion	1,065	195	-	250	-	30	-	-	1,540	0.6
5. Regional Urban Centres and Bangkok Metropolitan Rehabilitation	10,930	505	-	1,320	-	20	11,460	-	24,235	9.6
6. Distribution of Infrastructure Services	23,190	10,020	-	21,420	85	165	7,555	-	62,435	24.7
7. Distribution of Social Services	83,075	19,145	-	440	310	545	70	-	103,585	41.0
8. Reserve Funds		3,665	-	1,165	-	555	-	-	5,385	2.1
Total	155,230	45,170	435	29,365	760	1,740	19,750	-	252,450	100.0

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
I. Development and Conservation of Economic and Environmental Resources		16,555	335	200	150	17,240	Figures in the brackets relate to the new projects.
		11,020	335	20	—	11,375	
		400	—	5	—	405	
		800	—	—	—	800	
1. Land	To conduct mapping surveys so as to classify different soil types according to their fertility. Land classification, soil experimentation and the formulation of land use planning will be also undertaken.						
1.1 Land Classification and Survey for Development							
1.2 Land-Ownership	To conduct cadastral surveys of land ownership and to issue Land Title Certificates (Naw Saw 3) to cover an area of 23.61 million rai to farmers based on aerial photographs. Through extension of land						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
1.3 Land Consolidation and Development	<p>registration facilities, additional land title deeds will be issued to farmers covering an area of 19.2 million rai. Aerial Photographic mapping of 20 Million rai will be conducted.</p> <p>To allocate big and small plots of land to farmers and provide occupational and land development assistance in the form of cooperatives such as Settlement Cooperatives and cooperatives which enable farmers to acquire land on hire-purchase terms. Cooperative villages for farmers in the irrigated areas of Ba Jaw and Mu Noe in Narathiwat Province will also be set up.</p>	1,100	—	5	—	1,105	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
1.4 Land Reform		120	—	—	—	120	
1.4.1 Survey for Land Reform	To survey land ownership pattern in an area covering 11.5 million rai which has been designated for land reform programmes.						
1.4.2 Land Management Reform	The first phase consists of a land reform programme to provide land ownership rights and land holdings for agricultural purposes to tenant farmers, landless Labourers and those who have insufficient land for cultivation. This programme aims at reaching 400,000 farm households and involves a total area of 10 million rai of which 6 million rai will be private land and the remainder public land.	7,800	—	— (10)	—	7,810	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
1.5 Land Consolidation	<p>During the second phase, emphasis will be put on the improvement of agricultural resources, an increase in production inputs and the provision of marketing arrangements for areas that have been prepared for farmers which have already been occupied. These services should be extended to cover an area of about 1.4 million rai.</p> <p>To launch land consolidation programmes in irrigated areas including survey design and construction of distribution and drainage canals for all-year-round cropping. Suitable sources of financing and</p>	800	(335)	—	—	1,135	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	modern farming techniques will be introduced to farmer's groups and cooperatives. Private enterprises will also be encouraged to actively participate in the enlargement of land consolidation programmes especially in the Upper Chao Phya Development Projects.						
2. Forestry		4,220	—	130	150	4,500	
2.1 Survey and Research	To conduct surveys and research on forest resources for use as a basis for formulating policies on production, forest use and afforestation.	170	—	20 (5)	—	195	
2.2 Forest Control and Protection	To strengthen forest protection and enforcement of relevant laws such as the Forest Act and National	1,870	—	10 (20)	—	1,900	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	Forest Reserves Act, Forest Protection Units will be expanded and improved from the existing 220 units to 336 units for patrolling 11 million rai of forest land. Wildlife conservation zones will be expanded from 12 to 22 zones covering 20 million rai. New National Parks will be established to raise the number of parks from 13 to 20 and increase parkland areas to 10 million rai. Forest boundaries will be surveyed and demarcated to delineate forest areas from cultivated areas according to the resolutions of the National Land Consolidation Committee.						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
2.3 Management and Reforestation	The management of forestry projects will be strengthened and the activities of those who obtain forest concessions will be more closely supervised. In addition, reforestation of 60,000 rai in the North-east and 300,000 rai for teak and other woods will be implemented together with a forest replantation scheme of the Forest Industry Organization covering an area of 175,000 rai.	680	—	25 (50)	150	905	
2.4 Watershed Conservation and Improvement of Depleted Forest Areas	To conserve the watershed areas and improve areas in the national forest reserves that have been illegally occupied by setting up forest settlements. In	(1,500)	—	—	—	1,500	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
3. Water Resources	addition, land will be allocated to landless farmers, on the condition that these farmers assist in the afforestation of watershed areas.						
		355	—	10	—	365	
	3.1 Rehabilitation of Fishing Areas To survey, rehabilitate and construct weirs, swamps, ponds and reservoirs for water storage and fish breeding. More research and more effective supervision of fishing activities in accordance with the Fisheries Act will be promoted via the following measures:	355	—	(10)	—	365	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	<ul style="list-style-type: none"> - To survey and demarcate the boundaries of fishing areas and proclaim 100 locations as government property - To rehabilitate 50 swamps and ponds for which work programmes and details have already been completed. - To complete construction designs of weirs for rehabilitating swamps and ponds at 62 sites. - To set up a Fisheries Development Centre in the Chao Nane Storage Dam in Kanchanaburi Province. 						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Govt. Revenues	Total	
4. Fuel and Power Resources 4.1 Geological Survey and Development	<ul style="list-style-type: none"> – To conduct general surveys on various swamps and ponds in the central and northern regions for further rehabilitation. – To construct weirs and dikes for water storage at 10 sites. – To build 10 marine fishery patrol vessels, (2 vessels per annum) – To build 5 inland fishery patrol boats. (1 boat per annum) 						
		940	–	30	–	970	
	To conduct geological mapping and data collection for strengthening geological survey work and basic geological research. Work plan in this field includes	640	–	(30)	–	670	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Govt. Revenues	Total	
	<ul style="list-style-type: none"> – Exploration for tin deposits in North, Central and South Thailand – Provision of technical know-how on mineral processing – Surveys for locating commercial deposits of minerals that can be used as fertiliser and for improving soil quality – Exploration for oil and other natural fuels will be stimulated – Companies which have acquired concessions for oil drilling will be supervised more closely and will be pressed to start production as early as possible. 						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Govt. Revenues	Total	
4.2 Mineral Resource Surveys	<p>– Surveys for locating minerals such as columbium and tantalum, minerals for industrial uses and for construction purposes</p> <p>– Surveys on environmental conditions in mining areas</p> <p>– Training of personnel in the field of geology for developing the mining industry</p> <p>To support development policies for the mining industry, it is important to carry out surveys on mineral deposits and reserves. These surveys will help to pave the way for increases in mineral production in general and more investment</p>	(300)	–	–	–	300	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Govt. Revenues	Total	
5. Environmental Development	in large scale mining projects in particular. An institution will be set up to provide technical and financial assistance in conducting mineral surveys and for mineral processing.						
	To carry out a survey and analyse data on industrial plants that create severe pollution problems and propose measures for limiting environmental pollution effects of industrial processing both in urban and rural areas.	20	—	10	—	30	
	5.1 Prevention of Environmental Pollution Caused by Industrial Processing	10	—	10	—	20	
	5.2 Supervision of Industrial Plants along the River Banks (Mae	10	—	—	—	10	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Govt. Revenues	Total	
klong, Tha Chin, Chao Phya and Bang Pakong)	river banks. The Factory Act and the City Planning Act will be used to check industrial pollution particularly in the Bangkok metropolitan area and in the vicinity of the larger urban areas in the Central region.						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
II. Promoting Income Distribution and Raising Rural Productivity 1. Integrated Rural Development	Particular emphasis will be put on the type of integrated rural development which aims at increasing crop output through the provision of credit, fertilizers and pesticides to farmers. The Bank for Agriculture and Agricultural Cooperatives will play the key role here. Special efforts will be made to increase productivity in specific areas and a number of crops such as tobacco, soy bean, mung bean and other cash crops will be identified for special attention. This approach	29,760	4,415	550	300	35,025	Project preparation is under-way.
		3,000	—	—	—	3,000	
		3,000	—	—	—	3,000	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
2. Livestock	should help to speed up and expand integrated rural development programmes to a greater extent.						
		2,320	145	135	—	2,600	
	2.1 Animal Hus- bandry	100	—	10 (15)	—	125	
	Research on high quality animal feed will be carried out to speed up the rate of animal maturity and new varieties of grass and bean species will be studied for improving pasture land. In addition, efforts will be made to improve the stock of pigs through the selection and promotion of the best breeds. Research into and diagnosis of major communicable diseases such as foot and mouth, pig's cholera and other new diseases will be carried out						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
2.2 Veterinary Development	<p>to remove these main obstacles to higher levels of production and exports. Top priority will be given to animal husbandry programmes for promoting livestock rearing in various regions for the purpose of raising the income of people living in rural areas.</p> <p>The production of vaccine and serum will be increased to 100 million doses per annum and eventually to a level that will be sufficient to meet domestic demand. Production of vaccine for foot and mouth disease will be given top priority. Animal disease control programmes will be implemented and correct</p>	470	—	65 (10)	—	545	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
2.3 Expansion in Breeding and Animal Artificial Insemination	<p>methods of livestock raising particularly breeding and castration will be introduced in every province. Disease free zones will be expanded to increase livestock exports.</p> <p>Selected animal breeds will be increased through artificial insemination. The Netherlands Government will provide technical assistance for producing 50,000 doses of sperm per annum. Annual AI target include 8,000 buffaloes, 30,000 swines and 80,000 cattle.</p> <p>The programmes will be launched through 27 Artificial Insemination Stations and 13 Livestock Extension Centres. In addition, 30</p>	240	—	(10)	—	250	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
2.4 Strengthening Livestock Breeding Stations and Crop Stations	<p>new Artificial Insemination Stations will be set up to expand services to meet the local demand.</p> <p>The programmes of 13 Livestock Breeding Stations and 7 Breed Promotion Centres will be restructured so that there is more specialisation at each station/centre in breeding buffaloes, cattle, swine or poultry in relation to the requirements of each particular region. Imported bulls will be cross-bred with indigenous cattle owned by people in rural areas. Annual cross-breeding targets include 100,000 cattle and buffaloes in the Northeast and in the South, 1,000 dairy</p>	590	60	(15)	—	665	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	<p>cattle in the North and Central regions and 7,000 pigs in the Northeastern and Western regions. For poultry, a target of 1.4 million eggs per year in the Northeast and Southern regions has been set.</p> <p>The output of 16 Forage Crop Stations in the Northeast North and South regions will be increased so that seeds supplied to farmers produce at least 1,000 tons of forage and 1,000 tons of dry and fermented grass per year. Common fields will be rehabilitated at 4 locations. In the Northeast, 10,000 rai of common fields will be turned into pasture land.</p>						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
2.5 Livestock Promotion and Development in Specific Areas	<p>Cattle rearing for beef will be promoted, using a package programme consisting of research on animal feeds, diseases and breeds, the promotion of the activities of farmer's groups, breeding expansion, pasture development and animal disease control. This project will cover a total area of 500,000 rai and benefit 170,000 farm households in 640 villages in the Northeast. An envisaged production target of 72,000 beef cattle per annum has been set for the fourth year of the Plan.</p> <p>The dairy cattle programme will be expanded through the setting up</p>	180	45	10	—	235	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
2.6 Acceleration of Livestock Production in Specific Areas through Integrated Rural Development Programmes	<p>dairy cattle settlements for increasing and improving dairy cattle stock through artificial insemination. In addition, a marketing centre will be established to purchase fresh milk from farmers at a rate of 3 tons per day. This programme will be launched in the Phra Puthabat Land Settlement for 40 households.</p> <p>Aim to increase the production of beef cattle, dairy cattle, pigs and poultry in the South for export to 20,000 tons per annum by encouraging 10,000 farm households to grow grass and forage crops for livestock rearing in their coco-</p>	(740)	(40)	—	—	780	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	<p>nut and rubber plantations. In addition, animal breeding and disease control services will be provided to farmers.</p> <p>Beef cattle raising will be encouraged in 10 self-help settlements in the Northeast. The target is to get 3,600 farm households to plant forage crops in an area of 44,000 rai and to produce 10,000 high quality cattle per annum.</p> <p>Milk production will be promoted via the encouragement of dairy cattle rearing in the Central and Northern regions. The target is to get 4,000 dairy farm households to raise</p>						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
3. Fisheries	40,000 dairy cattle and produce 260 tons of milk per day. This programme requires close cooperation among various government agencies such as the Livestock Department, the Department of the Promotion of Cooperatives, the Department of Social Welfare, the Bank for Agriculture and Agricultural Cooperatives and the Dairy Promotion Organization of Thailand.						
		1,205	—	100	—	1,305	
	3.1 Freshwater Fishery	265	—	(5)	—	270	
	Freshwater fish catch will be increased to meet domestic demand through the following measures :—						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	<ul style="list-style-type: none"> – A Fishery Station will be established in Pichit Province and land for building a new Fishery Station in Suphanburi Province and in some other provinces will be purchased. – The breeding of freshwater fish will be expanded to increase supplies by 370 million fresh water fish. – 300 experimental research projects will be carried out. – Government research results in the field will be diffused to target groups. – 100 million fishes will be released in rehabilitated fishing areas. 						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	<p>– freshwater fish farming techniques will be demonstrated in irrigated areas of the Chao Phya Basin and in Kang Kachan in Petchburi Province, covering 13 provinces altogether.</p> <p>– the work programmes of fishery stations in all regions will be coordinated more effectively.</p> <p>– Completion of construction of the Office of National Freshwater Fishery Institute.</p> <p>– Experimental research and training on freshwater prawn culture will be conducted.</p>						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
3.2 Brackish Water Fishery	<p>Brackish water fish catches will be increased to meet domestic demand and export requirements through the following schemes :-</p> <ul style="list-style-type: none"> – Experimental research on brackish water fishery will be carried out and research results will be related to fishermen. – Surveys of coast areas will be carried out and at least 500,000 rai of coastal land suitable for aquaculture will be developed, especially for shrimp culture. – The experimental shrimp pond, hatchery and operation rooms of the 	200	—	5 (10)	—	215	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
3.3 Marine Fishery	<p>three existing Shrimp Hatchery Stations at Songkla Lake, Rayong and Phuket will be extended.</p> <p>Marine resources will be used at the most efficiency through the following schemes :-</p> <ul style="list-style-type: none"> - To promote greater efficiency in fishing operations, fishermen will be encouraged to use more modern equipment and new types of fishing boats will be designed. - A survey of fishing grounds will be undertaken to locate in particular pelagic species. - To prevent water pollution that could damage the marine resources. 	190	—	5 (20)	—	215	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
3.4 Development of Aquacultural Industry	<p>– To support international agreements and joint investments in marine fishery projects.</p> <p>The aquacultural industry will be developed through more effective research work and extension services relating in particular to conservation, processing and use of the most efficient equipment. Specific schemes include:–</p> <p>– the extension of fish markets and fishing piers at 6 locations–Samut Prakan, Chumporn, Ranong, Cholburi, Nakorn Si Thammarat and Samut Sakhon.</p> <p>– extension of credit to fishermen for repairing old</p>	550	–	5 (50)	–	605	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
4. Irrigation Projects	boats or buying new boats, engines and equipment (583 boats)						
	– construction of cold storage plants and ice factories in 5 provinces, i.e., Khon Kaen, Suratthani, Phuket, Samut Prakarn or Hua Hin and Rayong. In addition, 32 mobile cold storage units will be provided.						
		12,055	2,855	60	–	14,970	
4.1 Large Irrigation Projects	The irrigation projects in the Fourth Plan can be classified as follows:– – Storage dams, diversion dams as well as distribution and drainage systems will be constructed	7,850	2,855	(60)	–	10,765	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	<p>for 11 on-going projects covering an area of 1.1 million rai which will be completed during the Fourth Plan. This will not only expand the irrigated areas, but also prevent flooding and saline water from damaging cultivated areas.</p> <p>– Storage dams, diversion dams as well as distribution and drainage systems will be constructed for 2 projects which will be completed after the Fourth Plan period. These projects are the Phitsanulok Irrigation Project and the Development of Underground Irrigation Project at Sukhothai which covers an area of 0.94 million rai.</p>						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	<p>– New Projects for expanding irrigated areas in the Northeast and for flood control will be supported. These projects include Nam Chi Project, Upper Nam Project, the water pumping project from the Mekong River and major rivers in the Northeast, Mae Chang Project, Mae Kuang Project, Mae Ngat Project, Hoi Yong Project, Yom Basin Project and Bang Pakong Basin Project.</p> <p>– Projects which in addition to expanding irrigated areas help other ongoing projects to attain Plan targets or support the policy of decentralizing infrastructural facilities will</p>						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
4.2 Medium-sized Irrigation Projects	<p>be carried out. These projects include Pattani Project, Klong Sang Project and Kud Project.</p> <p>– New irrigation projects for which feasibility studies have yet to be carried out include projects at Mae Kuang, Mae Ngat, Mae Jung, Kud, Tung Sangbadan, Bang Pakong Basin, Lam Plai Mas, Kula Ronghai and Qual Noi.</p>						
	<p>Water resources outside the project areas of large irrigation schemes will be developed by constructing water tanks, weirs, dikes, flood control system, rain storage facilities as well as drainage system covering an area of 700,000 rai.</p>	2,160	–	–	–	2,160	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
4.3 Small Irrigation Projects	Drainage system, ditches and dikes as well as on-farm irrigation systems will be constructed to cover an area of 10 million rai. In addition, the water distribution system and pumping system will be built in order to help solve the problems of irrigated water shortage, concentrating on the utilization of natural water resources. The programme will be jointly implemented by RID and private organizations covering an area of 2 million rai.	1,045 (1,000)	—	—	—	2,045	
5. Soil Improvement	Agricultural productivity will be increased and cultivated areas will be expanded by improving soil fertility and	220	—	5	—	225	
		220	—	(5)	—	225	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	making use of unproductive areas covering 1.5 million rai of acid soil, 17 million rai of saline soil and 20,000 rai of the slash and burn cultivation of the hilltribes. A survey of coastal land will be conducted covering an area of 12 million rai in 25 provinces. In addition, agricultural extension schemes will be formulated to encourage farmers to improve soil fertility in various areas totalling 5 million rai, to develop 45,000 rai of pasture land and to produce organic fertilizers for soil maintenance for 3,207 rai.						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
6. Production of Seeds	The production of seeds of major crops such as rice, maize, soybean, kenaf and cotton will be increases so that 17,000 tons of seeds can be sold each year.	160	—	15	—	175	Project preparation is under-way.
		160	—	10 (5)	—	175	
7. Agricultural Extension 7.1 Agricultural Extension at the National Level	The number of agricultural extension officers will be increased to achieve the ratio of one officer to 1,000 farm households instead of 1 : 4,000 as at present. Transport and related equipment necessary for operating and improving the extension system will also be acquired to help provide better services to farmers.	4,850	990	75	—	5,915	
		(1,700)	(620)	—	—	2,320	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
7.2 Extension Work Relating to Economic Crops	The production of economic crops will be increased by introducing modern farming techniques and providing necessary information to the farmers through a larger number of extension officers.	200	—	10 (10)	—	220	
7.3 Prevention and Control of Plant Disease	Investigations into the spread of plant diseases in crop growing areas will be made to provide information, training and services relating to plant protection for farmers.	500	—	10 (5)	—	515	
7.4 Integrated Agricultural Extension	Agricultural extension work in the provinces of Ubon Ratchathani, Roi Et and Yasothon will use a system whereby farmer leaders help the district	50	—	5 (5)	—	60	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
7.5 Agricultural Extension in Irrigated Areas	<p>agricultural officer. At the same time, electricity, water supplies and roads will be provided in the areas covered by this type of extension work.</p> <p>Agricultural production will be raised, especially in the large irrigation project areas by giving farmers advice on the crops that are most suitable for each specific area, crop rotation and multiple cropping.</p>	90 (1,800)	—	(10)	—	1,900	
7.6 Rubber Replantation	Rubber replanting in South Thailand will be accelerated to the 250,000 to 300,000 rai per annum level.	510	370	20	—	900	
8. Agricultural Research							

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
8.1 Agricultural Economics	Research will be carried out into production cost, prices, marketing, production inputs and agricultural commodities. Results should be useful for solving agricultural problems.	1,820	25	120	—	1,965	
		150	—	5 (5)	—	160	
8.2 The Development of an Agricultural System or Specific Areas	Agricultural development at the regional level will be coordinated more effectively by setting up a regional agricultural centre to study the appropriate agricultural system for each irrigated area and to promote year round cropping in suitable areas.	290	—	20	—	310	
8.3 Conducting Experiments and Research on Plant Diseases and Pests.	Areas where plant diseases are prevalent will be investigated. This will be done on a nation-wide basis. Studies will be carried	220	—	10	—	230	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
8.4 Improvement of Experimental Stations	<p>out into ways to prevent plant diseases and pests. Demonstration farms will be set up covering 100 rai. Fifty training courses will be provided for agricultural extension officers each year.</p> <p>Improvements will be made at 11 experimental field crop stations, at 10 horticultural crop experimental stations and at 23 rice research and testing stations.</p>	500	25	(5)	—	530	
8.5 Analysis of Soil and Fertilizer Types	<p>Analytical services on soil and fertilizers will be provided to farmers and other relevant government agencies. At least 2,000 analyses will be carried out each year.</p>	60	—	—	—	60	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
8.6 Farm Mechanization	Research will be carried out on farm mechanization and the innovation of farm equipment will be encouraged. Farm machinery units will be set up in the North and Southern regions to provide services on land levelling and construction of wells and dikes.	85	—	5 (10)	—	100	
8.7 Improving Productivity of Economic Crops	Research relating to seed multiplication, land improvement and methods of cultivation of major crops such as rubber, mulberry, coconut and horticulture crops will be carried out.	515	—	50 (10)	—	575	
9. Buffer Stock	Buffer stocks will be used by the Government as an instrument for stabilising domestic prices and	2,380	400	—	300	3,080	
		2,380	(400)	—	300	3,080	Revolving fund for price

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
10. The Promotion of Cooperatives	for storing sufficient amount of agricultural commodities for export. Warehouses will be built in central and rural areas.						stabilization of rice and rubber will be 2,000 and 3,000 million baht respectively.
	The Government will promote the establishment of agricultural cooperatives, especially multi-purpose cooperatives. Emphasis will be placed on land clearing and soil improvement through the provision of an efficient system of water distribution and drainage to the farms. In addition, marketing coo-	700	—	10	—	710	
		700	—	(10)	—	710	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	peratives for domestic and export purposes will be built up. These cooperatives will facilitate the collection of paddy and other economic crops such as maize, rubber, jute, tapioca, sugarcane, coconut, tobacco, tea, mint and oil palm in particular. Cooperatives will also be encouraged to serve the beef and dairy cattle raising activities. All forms of cooperatives, including Fisheries Cooperatives, Services Cooperatives, Store Cooperatives and Savings Cooperatives both in rural and urban area will be fully supported and encouraged to expand their						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
11. Improving Production and Marketing in Land Settlements and Accelerated Rural Development Areas	activities in a coordinated way. The Government will also encourage research into ways of making co-operatives more effective and will provide training for personnel of co-operatives in order to improve the efficiency of co-operatives and to encourage closer coordination between farmer groups and cooperative.						
	Greater emphasis will be put on integrated occupational development to improve agricultural production and marketing in 30 land settlements and in the accelerated rural development areas for	1,050	—	30	—	1,080	
		1,050	—	20 (10)	—	1,080	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	principal crops such as maize, soybean, coconut, cotton, rice and rubber as well as for beef and dairy cattle raising, sericulture and oil palm.						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
III. Industrial Development		2,295	455	40	215	3,005	
		255	455	5	215	930	
1. Public Infrastructure and Services	Industrial estates and export processing zones will be established to stimulate industrial investment through the provision of basic infrastructural facilities and to provide sites for industrial plants for isolating environmental pollution stemming from industrial activities. Industrial estates and export processing zones will be established at the following seven locations:- Minburi, Samut Sakorn, Haadyai, Utapao, Klong Dan and at selected sites in the North and Northeast regions.	255	(455)	(5)	215	930	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
2. Technical Knowledge and Training Services	Industrial estates may be established in other provincial areas as well for promoting industrial expansion in those areas.						
	In addition to the Bangkok Metropolitan areas where most of the factories are located, technical knowledge and training services will be extended to provincial areas, especially the 14 southern provinces, so as to comply with the policy of regional industrialization. Such training and technical services will be improved in accordance with the following guidelines:-	250	—	15	—	265	
		250	—	10 (5)	—	265	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	<ul style="list-style-type: none"> - To strengthen the data collection system and the processing of industrial statistics for use in analysing industrial problems - To transfer technical knowledge relating to the textile industry to Thai technicians. - To promote cottage industries by organizing vocational training in provincial areas in conjunction with the National Security Command. - To establish an Institute for Research and Development of Thai-Industries. 						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
3. Technical Know-how Relating to Industrial Technology	– To operate in conjunction with the Ministry of Commerce in marketing promotion by organizing trade exhibitions for Thai products both in Thailand and overseas so as to promote Thai culture and to develop another source of foreign exchange earnings.						
	Fifty types of industries will be surveyed to obtain further information on the technical efficiency of these industries in order to formulate realistic programmes for improving industrial technology. The maintenance of machinery in factories will be emphasised and information	5	–	5	–	10	
		5	–	5	–	10	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
4. Studies on Investment Opportunity	will be provided to enable industrialists to reduce production costs, minimise accidents in factories and implement fuel saving methods.						
	• Research will be carried out on ways of using raw materials and wastes from the agricultural, forestry and natural resources sectors for industrial purposes. Investment opportunity studies will focus on major industries producing products such as iron, fertilizers, insecticides, and potteries. The Government may set up factories to produce these products on its own or in conjunction	60	—	10	—	70	
		60	—	(10)	—	70	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
5. Industrial Promotion, Regulation and Services	with the private sector. The potentials for developing other industries such as agro-industries, chemicals, the manufacture of machinery and mining will also be assessed.						
	The objectives are to accelerate the specification of product standards and to provide analytical and testing services on the quality of these industrial products. The training of technicians for industry will also be emphasised. In addition, the Government will help support industrialists who attempt to expand working capital through mortgaging or	275	—	5	—	280	
		125 (150)	—	5	—	280	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
6. Promotion of Basic Industries	deposit-selling registered machinery. The provision of credit to small-scale industries will also be expanded.						
	This is to comply with the policy on industrial development which gives importance to the establishment of basic industries during the Fourth Plan period so as to improve the country's industrial structure to help build up the confidence of foreign investors in Thailand and to speed up the process of economic recovery during the early phases of the Fourth Plan. In this connection, the Government may	1,450	—	—	—	1,450	
		(1,450)	—	—	—	1,450	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	have to participate in joint ventures with the private sector in establishing basic industries which require large capital investment and/or those which have problems in obtaining concessions for areas which are sources of raw material supplies. Basic industries which will be promoted include those which produce lubricating oil and ammonium fertilizer. Agro-industries and ASEAN regional industries will also be promoted.						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
IV. Exports, Imports and the Promotion of Tourism 1. Export Promotion	<p>Specific plans will be formulated for promoting exports. These plans will concentrate on the development or inputs for producing export goods, export facilities and incentives and will outline ways of penetrating new overseas markets.</p> <p>Main components in this export promotion strategy include the following:—</p> <p>— Research will be carried out to obtain more information on products, marketing aspects and exporting procedures.</p>						
		1,260	250	30	—	1,540	
		570	—	5	—	575	
		570	—	(5)		575	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
2. Commercial Services	<p>– Institutions which provide basic services and facilities relating to trade statistics and commercial activities in general and product standard testing, foreign market expansion, new market penetration and the promotion of Thai products abroad in particular will be strengthened.</p> <p>– International cooperation and trade negotiations will be used more effectively</p>						
	The Government will	290	–	5	–	295	
	provide consumer protection in terms of regulating domestic prices of various products and in terms of supervising product quality.	175 (115)	–	(5)	–	295	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
3. Import Planning and Procedures	Commercial services to be emphasised also include the provision of domestic marketing information and technical training courses in business operation, insurance and auditing accounts. These services will be provided in provincial areas in particular. Commercial officers in provincial areas will be the main agents for implementing and coordinating these services in various regions.						
	The structure of imports will be thoroughly studied.	25	—	—	—	25	
	Results of these studies will then be used as inputs for formulating an import plan. Import procedures will be designed to streng-	25	—	—	—	25	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
4. The Promotion of Tourism	then Thailand's bargaining power in external trade, to protect domestic production and to help improve the country's balance of payments position.						
	Tourism will be promoted through the following means:—	375	250	20	—	645	
	<p>— Foreign and domestic sources of tourists will be studied.</p> <p>— Thailand's ability to expand and penetrate new markets will be increased through advertising, providing information services and up-grading manpower in the tourist business.</p>	295 (80)	(250)	(20)	—	645	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	<ul style="list-style-type: none"> – The conservation of potential tourist resources will be emphasised. – Existing tourist resources in various regions will be developed. – The Government, working in conjunction with the private sector will promote the production of souvenirs and the organization of indigenous festivals as tourist attractions. 						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
V. Growth Pole Development and the Rehabilitation of the Bangkok Metropolitan Area. 1. City Planning;	Ten master plans and sixty specific plans for various urban areas will be formulated each year. Priority will be given to the formulation of such plans for regional growth centres. This is vitally important, as the orderly growth of urban areas will, to an extent, help prevent the development of urban problems such traffic congestion and slums. In addition, master plans for improving the traffic system will be designed for the larger urban areas, includ-	11,435	1,320	20	11,460	24,235	
		215	—	10	—	225	
		210 (5)	—	(10)		225	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
2. Improvement and Expansion of Water Works	ing Chiangmai, Nakorn Rajasima, Songkla-Haad-yai and Khon Kaen.						
	The capacity of the Bang Khen Water Treatment Plan will be increased by 1.2 million cubic meters per day so as to expand service area to 570 square kilometers for 4.17 million people in the Bangkok Metropolitan area. The capacity of water treatment plants for outer districts will be increased by 25,000 cubic meters per day to cover an area of 90 square kilometres for 100,000 people.	1,445	1,135		260	2,840	
		1,445	(1,135)		260	2,840	
3. Bridge Construction and Renovation in the Bangkok Metropolitan Area	Two bridges across the Chao Phya River will be constructed at the end of Sathorn Road and near	620	185	—	—	805	
		620	(185)	—	—	805	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	the Memorial Bridge so as to alleviate traffic congestion in Bangkok. In addition the Memorial Bridge will be renovated so that it can be used for a longer period of time and for safety reasons.						
4. Construction and Improvement of Public Works and Utilities of the Bangkok Metropolitan Authority	The construction and improvement of public works and utilities under the responsibility of the Bangkok Metropolitan Authority includes the development of the metropolitan traffic system, flood control and sewerage and drainages systems. More details on these projects are presented below.	1,060		10		1,070	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
4.1 Solving the Traffic Problem	The traffic congestion problem will be tackled through the construction and renovation of various roads, particularly those which fill in the missing links in the urban road network, the building of car parks, and the construction of flyovers at crossroads.	650	—	—	—	650	
4.2 Sewerage and Drainage System and Flood Prevention	Sewerage and drainage system and flood prevention in the Triangle formed by Sathorn, Pathumvan and Bangapi will be improved. This project covers an area of 65 square kilometres and consists of the following schemes.—	410	—	(10)		420	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
5. Local Development	<ul style="list-style-type: none"> – The level of drainage pipes will be adjusted. – Additional drainage pipes will be provided. – A waste water treatment plant will be built at the end of Chongnonsee. – Three sewerage pumping stations will be built at Phadung Krung Kasem Canals, Ong-Ang and Lord. – A tunnel linking Sri Phraya Road near Chongnonsee canal with a nearby water treatment plant will be constructed. 						
	Local public works and	8,095	–	–	11,200	19,295	
	utilities will be con-	7,595	–	–	11,200	19,295	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	structed and developed. The implementation of a city development plan in 4 provinces in the North-east will be accelerated.	(500)					

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
VI. The Decentralization of Basic Infrastructure	1. The Provision of Water from Artesian Wells and Supplies of Potable Water for Rural Areas on a Nation-wide Basis	33,210	21,420	250	7,555	62,435	
		1,295	—	10	—	1,305	
		1,295	—	(10)	—	1,305	
	Rural potable water supply schemes will be accelerated through out the country by constructing deep wells, shallow wells, reservoirs, dikes, wiers, concrete and iron tanks and by the creation of lakes and ponds. It is expected that by the end of 1981, 13,760 more villages or about 10.3 million people will benefit from these schemes. Moreover, studies of potential sources of water from artesian wells will be carried out so as to formulate plans and control measures for						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
2. Reservoir Construction	water use in the Metropolitan areas, the upper and lower Chao Phraya Basin and the Southern coastal plain along the Gulf of Thailand.						
	The Mabprachan reservoir in Cholburi province with a storage capacity of 14.8 million cubic metres will be constructed to supply water for consumption to the people in Na Klua, Pattaya and nearby tambols (sub-district).	110	—	—	—	110	
		110	—	—	—	110	
3. Provincial Water Supply	The production capacity of provincial waterworks will be increased by 150,000 cubic metres per day by constructing 48 waterworks and expanding	1,040	—	10	—	1,050	
		1,040	—	(10)	—	1,050	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
4. Drainage and Sewerage Works for Various Communities	the existing 60 waterworks. This will provide an additional 600,000 people or about 10 per cent of the population in various regional towns with potable water services. By the end of 1981, 25 per cent of the total number of urban inhabitants will receive water supply services from provincial waterworks.						
	A master plan and engineering designs will be prepared for the development of drainage and sewerage systems as well as garbage and refuse disposal for various municipalities, sanitary districts and densely populated communities.	10	-	-	-	10	
		(10)	-	-	-	10	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
5. Construction and Rehabilitation of Public Utilities and Facilities	The Government will approve the construction of retaining walls along the banks of the Yom River, at Muckdaharn Dam and along the Mekong River. Bridges across the Tha-Chin River, Pasak River and Lam Huey Mook will also be built. Other retaining walls and bridges will be constructed where necessary. The Chedi (dome-shaped construction in a temple ground) at Nakhon Prathom which is one of the tallest Chedi in Thailand, an important religious construction and a tourist attraction will be rehabilitated.	100	—	—	—	100	
		100	—	—	—	100	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
6. Development of Training Centres of the Office of the Accelerated Rural Development (ARD)	The ARD programme will be expanded, in particular, the work of ARD centres and services which include the Accelerated Rural Development Centres in Northeast, the East and the Southern regions, ARD Intensive Training Centres in the provinces of Nakorn Ratchasima and Prachuab Khiri Khan, the ARD Machine Operation Training Centre in the Northern region, ARD High Capacity Moving Centres, Water Resource Training Centres, Technical Engineering Services and the Engineering Equipment and Accessories Service. The ARD programme will be reorientated	490	—	100	—	590	
		490	—	50 (50)	—	590	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	<p>to serve the following purposes:—</p> <ul style="list-style-type: none"> – To coordinate more closely with provincial and local authorities in carrying out rural development schemes; – To provide engineering and machine repairing services; – To construct and maintain ARD standard roads, village roads, bridges and ARD centres; – To survey and develop water resources for consumption and agriculture, and 						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
7. Housing	<p>– To train engineers, technicians, other officers and village leaders.</p> <p>To solve the problem of housing shortage, the National Housing Authority will construct 120,000 housing units for various income groups in the Bangkok Metropolitan area and in the provinces. As such, 24,000 housing units of various types will be constructed each year, of which 23,000 units will be in the Bangkok Metropolitan area and 1,000 units in provincial areas.</p>						1/Dome- stic loans of 14,880 million baht are exclu- ded.
		430	2,580	10	–	3,020 ^{1/}	
		430	(2,580)	(10)	–	3,020	
8. Construction of Mass Transit Routes and Express ways	To solve the traffic problem in Bangkok, the Expressway and Transit	1,600	2,435	10	–	4,045	
		1,600	(2,435)	(10)	–	4,045	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
for the Bangkok Metropolitan Area	Authority of Thailand will implement the construction of 3 expressways, namely the expressway to link Din Daeng with the port, the expressway to link Dao Khanong with the port and the expressway to Link Bangna with the port. The total distance of these expressways is 28 kilometres. Mass transit routes have been stipulated for Phra Khanong-Bangsue, Wongwien Yai-Sathorn-Lad Prao; and Dao Khanong-Makkasan. The total distance of these routes, is 50 kilometers.						
9. Survey and Development of Power Resources	Survey will be conducted to locate and help develop power resources such as	480	-	10	175	665	
		480	-	(10)	157	665	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	hydro-power and lignite to the fullest extent possible. However, top priority will be given to the development of natural gas and domestic petroleum sources to reduce the country's dependence on petroleum imports. The possibilities of using oil shale will be explored, mineral resources will be developed and the extent to which nuclear power technology can be adapted for use in Thailand will be studied. A master plan for the development and use of power resources on a national level will be formulated.						
10. Construction of Electricity generating sources will be developed		2,740	7,455	-	-	10,195 ^{1/}	1/ The
Electricity Generation		2,740	7,455	-	-	10,195	Electricity

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
and Distribution Systems	and electricity distribution systems will be constructed so that the supply of electricity adequately meets the domestic demand for electricity. The expansion of the electricity of distribution system will also be implemented in accordance with the accelerated rural electrification plan.						Generating Authority of Thailand will invest 4,415 million baht from its own revenue and 3,509 million baht from domestic loans.

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
11. Improvement and Expansion of the Electricity Distribution System in Bangkok	Electricity services will be expanded and made more reliable by constructing and increasing the capacity of the stations, sub-stations, transmission and distribution lines and installing more transformers both in Bangkok and surrounding area.		1,320	—	1,680	^{2/} 3,000	2/ Domestic loan of 630 million baht is excluded.
			(1,320)	—	1,680	3,000	
12. Expansion of Electricity Distribution System in Provincial and Rural Areas	The electricity distribution system in various regions will be expanded to adequately meet the demand for electricity in these areas by concentrating in particular on village electrification. At least 5,200 more villages should be electrified.		900	—	1,760	^{3/} 2,660	3/ Domestic loan of 2,060 million is not included.
			(900)	—	1,760	2,660	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
13. Accelerated Rural Electrification	Small electricity generating sources will be developed, especially the hydro electric sources for remote villages which are beyond the reach of the present electricity distribution system. The second phase of the rural electricity distribution system will be implemented during the Fourth Plan. In this phase, every tambol (sub-district) will be electrified by the end of the Fourth Plan period.	270	620	—	—	1/ 890	1/ Domestic loan of 1,501 million baht is excluded.
		(270)	(620)	—	—	890	
14. Utilization of Natural Fuels	Greater effort will be made to utilize natural fuel sources to the fullest extent possible by accelerating the development of	445	—	10	—	455	
		(445)	—	(10)	—	455	

Investment Programme	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
15. Improvement of Cargo and Passenger Transport on Roads and by Rail	natural gas and petroleum sources within the country. This includes the possibility of constructing a pipeline to link natural gas deposit areas with markets.						
	The following guidelines measures will be applied to reduce the cost of transportation;-	1,335	955	—	1,655	3,945	
	<p>—Truck transportation terminals will be set up in the vicinity of processing and distribution centres to reduce traffic congestion in the cities, accidents and the cost of maintaining city roads</p> <p>— Transportation services both on roads and by rail for cargos and passengers</p>	1,330 (55)	(955)	—	1,655	3,945	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
16. Development of Water Transport for Cargos and Passengers	<p>will be expanded by acquiring more trucks, buses and cargo and passenger carriages and by improving the standard of bus terminals.</p> <p>– Measures will be taken to increase safety in road transportation and training will be provided for those engaged in road transport operations.</p> <p>– Road transport for tourism will be promoted both within the country and between ASEAN member countries.</p> <p>– All modes of transport will be developed in a coordinated way.</p>						
		1,220	400	40	260	1,920	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
16.1 Inland Water Transport	<p>Water transport, the cheapest means of transportation will be developed and improved. Inland waterways in particular will be developed to provide more convenience and to lower transportation costs of agricultural products. This will be done by improving various connecting canals and navigable channels in the Chao Phraya, Nan, Noi, Ta-Chin, Bang Prakong and Mae Klong Rivers and by constructing water transport stations.</p> <p>As for coastal transportation which is economically essential to people living in various coastal areas,</p>	255 (335)	—	5	—	595	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
16.2 International Water Transport 16.2.1 Deep Sea Ports	<p>steps will be taken to improve the navigable channels leading to coastal and fishing ports, to develop coastal ports along the east and west coasts and to improve navigation signs. These efforts must be consistent with the channel dredging plan, the improvement of commercial ports, fishing ports and the cold storage industry so as to support the growth pole development strategy and local production.</p> <p>Ports and handling facilities will be developed for promoting exports in accordance with production tar-</p>	(540)	(400)	(15)	70	1,025	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	gets. Development schemes will be carried out through the increase of service capacity of Bangkok Port, the improvement of Sattahip Port for exporting products and the construction of a deep-sea port at Laem Chabang. Planning and construction of deep-sea ports at Songkhla and Phuket will be undertaken in order to reduce exporting costs and to support the growth pole development strategy as well as industrial activities. This will also help generate more income and jobs for local people.						
16.2.2 Merchant Marine	The national merchant marine will be developed	10 (80)	—	20	190	300	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
17. Development of Highway and Local Roads 17.1 National and Provincial Highways	to increase foreign exchange earnings, job creation and the reduction of exporting costs. The essential components of merchant marine operations will be developed. These components include personnel production and training, dock and ship building development and the improvement and enlargement of the commercial fleet.						
		20,265	2,025	—	—	22,290	
	The Government will construct and rehabilitate national and provincial highways totalling 10,645 kilometres so as to provide	8,400 (5,800)	(2,025)	—	—	16,225	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
17.2 Local and Rural Roads	<p>vital transporting routes between markets and producing areas and for stimulating growth in rural areas.</p> <p>A total length of 14,822 kilometres of local and rural roads will be built and rehabilitated for more convenience and for transportation cost savings, especially in the accelerated agricultural production areas. This programme also includes the construction of rural roads between villages and communities which is in line with the decentralization of infrastructure services to agricultural communities.</p>	4,295 (1,770)	—	—	—	6,065	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
18. Improvement of Air Transport 18.1 International Airport	Don Muang Airport will be improved to maintain its position as the centre of commercial air transport for the Southeast Asia Region. Studies relating to the use of U-tapao Airport for airfreight and tourism will be carried out to support the development of various manufactured goods in the east coast region in accordance with the construction of a deep-sea port and the policy to develop new urban areas outside the Bangkok area. This should alleviate problems of population density and increasing business	990	—	50	385	1,425	
		95 (515)	—	(50)	18	678	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
18.2 Domestic Air Transport	<p>volumes in the Bangkok Metropolitan area. Chiang-mai Airport will be improved in response to the increased demand for air transport facilities in the Northern region. Repair and maintenance services for international airlines will be strengthened.</p> <p>Commercial business in various regions of the country will be promoted through the development of domestic air transport. The following measures in particular will be applied :-</p> <p>— Provincial airports and related facilities as well as air travel communication services will be expanded.</p>	380	—	—	367	747	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
19. Improvement of Communications and Telecommunications Systems 19.1 Expansion of Telephone System	– Modern airplanes in response to the increases in demand will be bought.	390	2,730	–	1,640	4,760	
	In order to support the distribution of infrastructural services to various regions, an additional 74,400 telephone numbers in provincial areas will be provided and long-distance telephone services will be extended to cover 133 districts which at present do not have telephone service. In addition, local public telephones and long-distance telephone services for	–	2,730	–	1,615	4,345	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	<p>communities all over the country will be increased.</p> <p>As for the Bangkok Metropolitan area, an additional 223,700 telephone numbers will be provided to meet the commercial business demand and to help reduce traffic problems.</p>						
19.2 Radio, Television, Postal and Telegraph Services and Meteorology	<p>The communications system in general and mass media services in particular will be expanded so as to support the development of various activities. Radio and television networks which are vital tools for public relations will be improved and expanded. In this connection,</p>	140 (250)	—	—	25	415	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	<p>the broadcasting capacity of the Radio of Thailand will be increased and an additional twelve television stations will be constructed in the Northern and Southern regions. In addition, local postal and telegraph services will be expanded.</p> <p>As for meteorology, development will be directed towards the improvement of meteorological activities to support agricultural and other development activities.</p>						

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
VII. Distribution of Social Services	1. Educational Development	102,220	440	855	70	103,585	(1) Educational supporting funds for Bangkok Metropolitan and local municipalities of 2,465 million baht are included.
		(1)	(2)	(3)	(4)		
		77,365		200		77,565	
	1.1 Compulsory Education	40,470 (150)	—	—	—	40,620	
	1.2 Secondary Education	14,645 (1,680)	—	—	—	16,325	
	1.3 Vocational Education	2,600 (1,055)	—	30 (20)	—	3,705	(2) Foreign Loan will be sought from sources with a low rate of
	1.4 Supporting Classical Art	125	—	—	—	125	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
1.5 Private Education Management	To supervise private educational institutions particularly with respect to the quality of teaching, tuition fees, etc.	1,590 (1,335)	—	—	—	2,925	interest and revised according to the necessary changes. (3) Attempts will be made to obtain additional foreign grant in order to accelerate educational development.
1.6 Teacher Training	To produce a sufficient number of qualified teachers to meet market demand.	1,910 (465)	—	—	—	2,375	
1.7 Educational Research	To carry out research and studies on education so as to produce textbooks suitable for conditions in each particular region.	335 (25)	—	— (50)	—	410	
1.8 Educational Development and Cooperation with International Organizations	To carry out educational development planning and cooperate with international organizations.	135	—	—	—	135	
1.9 Out of School Education	To provide compulsory education and post-compulsory education to those who cannot enrol in schools.	1,915	—	— (50)	—	1,965	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
1.10 Higher Education	To provide higher education in various fields according to public demand.	8,315 (615)	—	30 (20)	—	8,980	(4) Estimated actual disbursement in the 4th Plan. The estimated expenditure in the educational development have been earmarked at 94,933.91 million baht.
2. Public Health		18,905	(1) 440	(2) 530	70	19,945	
2.1 Research in the field of Medical	To develop and improve the medical service of the	1,395	—	60 (40)	—	1,495	(1) Foreign

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
Science and Medicine	Medical Service Department in providing advice, information and technical assistance to health centres, especially those in rural areas. In addition, medical care and other health services will be strengthened by expanding and setting up more provincial laboratory centres.						Loan will be sought from bilateral sources and revised according to the necessary changes.
2.2 Statistical Data and Information on Public Health	To support the implementation and evaluation of all public health programmes.	175	—	(10)	—	185	(2) Additional foreign grant for public health will be sought.
2.3 Health Services in Provincial Areas	To alleviate public health problems in rural areas and achieve the targets set for this sector by providing immunization, medical care, mother and child care, training of health personnel	(10,750)	—	20 (100)	—	10,870	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
2.4 Urban Health Services	<p>and the construction and improvement of health centres.</p> <p>To alleviate public health problems in urban areas and achieve the targets set for this sector providing immunization medical care, mother and child care, control of communicable diseases, family planning programmes, training of health personnel and the construction and improvement of health service units.</p>	(325)	—	10 (40)	—	375	
2.5 Health Services for Specific Groups of People	To expand health service programmes to specific groups such as medical	50	—	(10)	—	60	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	care preventive measures, disease control and health promotion, as well as to improve environmental conditions for the purpose of alleviating and solving various health problems.						
2.6 Personnel Training and Development	To train a sufficient number of personnel to support the health development projects of the 4th Plan. Attention will also be given to the distribution of personnel so that demand for qualified manpower in various areas are adequately met.	(1,000)	—	30 (20)	—	1,050	
2.7 Supervision of Medicine Dispensation and System	To systematize the production and purchasing procedures of medicine,	150 (100)	—	— (20)	70	340	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
Medical of supplies	medical supplies and equipment. More emphasis will be put on quality and standard controls.						
2.8 Disease Prevention and Control	Programmes for the prevention and control of physical and psychological disorders produced by drug addition and other diseases will be strengthened. In addition, the general public will be educated further on matters relating to environmental and occupational health hazards and ways to create immunity against various diseases.	3,960	—	20	—	3,980	
2.9 Nutrition	To compaign against the protein and calorie malnutrition as well as diphtheria	515	(140)	(50)	—	705	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
2.10 Family Planning	by providing education on nutrition, baby and protein food and iodized salt particularly to people in problem areas.						
	To reduce the rate of population growth to 2.1 per cent per annum at the end of the 4th Plan by providing services on various family planning methods.	(485)	(300)	100	—	885	
		610	—	20	—	630	
3. Labour Development							
3.1 Labour Statistics and Research	More data on labour force, employment and the demand for labour will be collected. Theoretical and practical training courses will be	100	—	—	—	100	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
3.2 Occupational Development	<p>provided for employees and those whose job is to supervise workers. In addition, employers and employees will be encouraged to perform their duties in accordance with the Labour Act.</p> <p>Legal control measures on alien workers will be enforced vigorously. Training programmes for workers superintendents, training instructors and unemployed youths will be provided. In addition, training programmes for raising the quality and efficiency of skilled labour will be emphasized.</p>	200 (145)	—	20	—	365	

Investment Programmes	Brief Description	Expenditures Estimated					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
3.3 Job Finding Service	To provide news and information on the labour market situation and occupational guidance to people who will be entering the labour market.	30	—	—	—	30	
3.4 Compensation Funds and Labour Relations	Funds will be collected from employers who hire more than 10 employees, for compensating workers injured on the job. Courses on labour relations for employers and employees will be organized for improving management worker relations and for limiting the number of labour disputes.	90 (45)	—	—	—	135	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
4. Social Welfare		1,690	—	60	—	1,750	
4.1 Social Insurance	To provide assistance to unemployed workers and those injured on the job.	160	—	—	—	160	
4.2 Welfare for Distressed Persons	To provide social welfare services to distressed persons whether there are children, youth, old people or handicapped in any way.	1,000 (85)	—	10 (40)	—	1,135	
4.3 Hilltribe Research and Welfare	Research work on hilltribes people will be carried out and social assistance will be extended to those people to raise their standards of living.	375	—	(10)	—	385	
4.4 Community Services	To promote more understanding and unity in various communities and provide training for community services staff and volunteers in helping victimized	30 (40)	—	—	—	70	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
4.5 Public Pawn Shops	groups. Support will be given to private agencies which undertake similar tasks. Pawn shop facilities and activities will be promoted.	—	—	—	—	<u>11/</u>	(11) Pawn shops will use their own funds to invest at 13 million baht and 52 million baht will come from domestic loan.
5. Recreation Areas and Sports		415	—	5	—	420	
5.1 Sports Promotion	To rehabilitate and	(335)	—	—	—	335	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	construct stadiums in Bangkok and in provincial areas for the general public, whether for practicing sports or for competing at the provincial, national or international level. Various other services to promote sports will be provided.						
5.2 Zoo Development	Zoological gardens in the Northern and Southern regions will be developed. Zoos will be established at Kao Kiew and at other suitable places to serve people interested in wildlife and natural flora.	(55)	—	(5)	—	60	
5.3 Public Parks	Land will be found for creating public parks to meet public demand. Existing public parks will be	(25)	—	—	—	25	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
6. Promoting the Status of Youth and Women	improved not only for providing additional recreation area, but also for enhancing urban environment.						
		125	—	10	—	135	
	6.1 Promoting the Status of Youth Training programmes will be provided for developing the personality and character of young people and for encouraging youth to work closely among themselves as well as with other youth groups. Young people will also be encouraged to participate in activities which are beneficial to society as a whole. Agricultural knowledge will be included in these	60	—	(5)	—	65	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
6.2 Promoting the Status of Women in Rural Areas	<p>training courses as well as guidance on how to use leisure-time most beneficially.</p> <p>Training on nutrition, cottage industry and family planning will be provided to women of all ages in rural areas so that they can make a more valuable contribution to both their families and their community. Women in rural areas will thus be more knowledgeable. In addition, such training will enable rural families to increase their incomes.</p>	(65)	—	5	—	70	
7. Social Development in Rural Areas	Training will be provided to occupational groups, children, youth, volunteer	1,910	—	—	—	1,910	
		1,910	—	—	—	1,910	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
8. Improvement of Prisons and Correction Procedures and Facilities	officers and tambol (sub-district) council members to motivate rural people to co-operate and make contributions to the construction, rehabilitation and maintainance of public property and to advise rural people on how to use their leisure time beneficially. Those living in self-help settlements will be provided educational, health and nutritional services.						
	Prisoners will be given some vocational training so that they will have some occupational skills when they are released from prison. Social workers will be assigned to work in the	225	-	-	-	225	
		(225)	-	-	-	225	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	prisons to help prisoners solve some of their problems. For young prisoners, 4 new centres for young prisoners will be established. In addition, 2 new centres will be set up to provide special curative treatment for prisoners who are drug addicts.						
9. Cultural Arts		345	—	30	—	375	
9.1 Public Relations on Thai Cultural Art	To promote better understanding of Thai cultural art for students and the general public.	30	—	—	—	30	
9.2 Conservation and Enrichment of Cultural heritage	Historical buildings and antiquities will be maintained and rehabilitated not only to preserve national cultural inheritance, but	145 (120)	—	(25)	—	290	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	also as tourist attractions. In addition, the art of wall painting and traditional entertainment will be preserved.						
9.3 Support for Professions in the Arts Field and Indigenous Art	To support those engaged in the Arts, both Thai and indigenous, so that these art forms, particularly potteries and sculptural works are improved and expanded both qualitatively and quantitatively.	45	—	—	—	45	
9.4 Promotion and Improvement of Cultural Education	To collect and preserve official documents, particularly those relating to the history of government agencies, which are raw material for historical	(5)	—	(5)	—	10	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
10. Religious Affairs	research. Three Regional Archive Centres will be established at Chiangmai, Khon Kaen and at Songkhla.	630	—	—	—	630	
10.1 General Administration in Religious Affairs	National and local religious property must be looked after, land certificates must be issued, the layout of the temple grounds must be drawn up and all temples in the whole kingdom must be registered.	(10)	—	—	—	10	
10.2 Supporting Various Religions	To promote Buddhism religious activities and practises, royal donations, subsidies to other religions, the development and reno-	555	—	—	—	555	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
10.3 Religious Development	<p>vation of temples, moral education for monks and novices as well as the dissemination of Buddhism within the country and overseas.</p> <p>All available resources within Buddhist circles will be used for the purpose of social and community development. These resources include moral education for the people in general and for young people in particular, religious textbooks and equipment, training for monks and novices, the provision of educational services to pre-compulsory - education</p>	60 (5)	—	—	—	65	

Investment Programmes	Brief Description	Estimated Expenditures					Remark
		Government Budget	Foreign Loan	Foreign Grant	State Enterprises & Local Government Revenues	Total	
	children via the setting up of temple-schools and Buddhist Sunday school as well as the promotion of Thai cultural research and dissemination.						