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REPORT AND RECOMMENDATION
OF THE
PRESIDENT OF THE
INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
TO THE
EXECUTIVE DIRECTORS
ON A
PROPOSED LOAN
TO
THE KINGDOM OF THAILAND
FOR THE
SECOND NATIONAL AGRICULTURAL EXTENSION PROJECT

July 23, 1979

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CURRENCY EQUIVALENTS

Currency Unit	=	Baht (B)
\$1	=	B 20
Baht 1	=	\$0.05
Baht million	=	\$50,000

WEIGHTS AND MEASURES

1 meter (m)	=	39.37 inches (in)
1 square meter (sq m)	=	10.8 square feet (sq ft)
1 cubic meter (cu m)	=	35.3 cubic feet (cu ft)
1 kilometer (km)	=	0.62 miles (mi)
1 hectare (ha)	=	10,000 sq m or 2.471 acres
1 kilogram (kg)	=	2.2046 pounds (lbs)

LIST OF ABBREVIATIONS AND ACRONYMS

DAE	-	Department of Agricultural Extension
EA	-	Extension Agent
HEA	-	Home Economics Agent
MOAC	-	Ministry of Agriculture and Cooperatives
SMS	-	Subject Matter Specialist

THAI FISCAL YEAR

October 1 - September 30

THAILAND

SECOND NATIONAL AGRICULTURAL EXTENSION PROJECT

Loan and Project Summary

Borrower: Kingdom of Thailand

Amount: \$40 million equivalent

Terms: 20 years, including 5 years of grace, with interest at 7.9% per annum.

Project Description: The proposed project is the second phase of a program to establish effective agricultural extension services nationwide through a system of frequent and regular visits to farmers by trained extension agents. Under the project, the extension program will be extended to the 39 provinces not covered under the first phase project (being financed under Ln. 1393-TH). The project makes provision for: (a) further strengthening of the Department of Agricultural Extension (DAE) and the establishment of clear lines of command and coordination from the national level to the districts, including the establishment of nine regional offices; (b) increasing the number of extension, supervisory, technical and support staff by about 1,800 persons; (c) local training for all extension workers and a limited number of overseas fellowships and training tours to neighboring countries; (d) the construction of two regional training centers, about 40 combined provincial and district extension centers, about 270 district extension centers and about 310 housing facilities (with 3 apartments each) for extension agents; (e) the procurement of vehicles, equipment, furniture and demonstration materials; (f) the employment of agricultural and engineering consultants; and (g) project monitoring and evaluation.

The project is expected to benefit some 2.3 million farm families by improving productivity, raising incomes and generally improving the quality of life at a relatively low investment cost of \$32 and incremental operating costs of \$4.70 per farm family. Project risks relate mainly to the rate and degree of adoption of extension recommendations by the farm families. As this is crucial to the success of the project, the work of the extension personnel will be continually monitored and evaluated during project implementation.

Estimated Cost:

	<u>Local</u> -----	<u>Foreign</u> -----	<u>Total</u> -----
	(\$ million)		
Civil works	15.1	8.1	23.2
Vehicles, equipment and materials	3.8	6.3	10.1
Training and consultants	1.8	0.9	2.7
Incremental operating costs	16.6	1.5	18.1
 Total base costs	 <u>37.3</u>	 <u>16.8</u>	 <u>54.1</u>
 Contingencies:			
Physical	1.8	1.1	2.9
Price	8.9	4.1	13.0
 <u>Total Project Cost</u>	 <u>48.0</u>	 <u>22.0</u>	 <u>70.0</u>
(including \$4.2 million in taxes and duties)			

Financing Plan:

	<u>Local</u> -----	<u>Foreign</u> -----	<u>Total</u> -----
	(\$ million)		
IBRD	18.0	22.0	40.0
Thai Government	30.0	-	30.0
 <u>Total</u>	 <u>48.0</u>	 <u>22.0</u>	 <u>70.0</u>

Estimated Disbursements from IBRD Loan:

<u>IBRD FY</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>
	----- \$ million -----					
Annual	1.2	6.3	8.0	11.0	11.0	2.5
Cumulative	1.2	7.5	15.5	26.5	37.5	40.0

Rate of Return:

Because of the nature of the project, it is not possible to quantify likely benefits in detail; however, a conservative calculation, assuming that benefits are limited to an increase in paddy production of only 26 kg/ha, yields an economic rate of return of 15%, indicating that the project is well justified.

Appraisal Report: No. 2420-TH, dated July 16, 1979.

REPORT AND RECOMMENDATION OF THE PRESIDENT
OF THE INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
TO THE EXECUTIVE DIRECTORS
ON A PROPOSED LOAN TO THE KINGDOM OF THAILAND
FOR THE
SECOND NATIONAL AGRICULTURAL EXTENSION PROJECT

1. I submit the following report and recommendation on a proposed loan to the Kingdom of Thailand for the equivalent of \$40 million to help finance the second national agricultural extension project. The loan would have a term of 20 years, including five years grace, with interest at 7.9% per annum.

PART I - THE ECONOMY /1

2. A Basic Economic Report entitled "Thailand - Toward a Strategy of Full Participation" (2059-TH) was distributed to the Executive Directors on September 18, 1978. The Report forges a link between the overall development of the economy and the extent and incidence of poverty. It concludes that Thailand's rapid economic growth over the past 15 years has led to a significant reduction in absolute poverty, but that certain income groups have lagged behind this progress. The report identifies the essential characteristics of these groups and points to the need for continued rapid overall development as well as the initiation of specific measures to deal with the poverty problem, particularly in rural areas. It further discusses the constraints to the successful implementation of these policies. Country Data are given in Annex I.

Recent Political Developments

3. Despite frequent changes at the top levels of government, there is a fundamental stability in Thai society and the bureaucracy. Recent changes in governments have mainly reflected differences in view about Thailand's external relations and on the political decision-making process within the country and not fundamental differences about the social or economic system. The civilian government formed in November 1977 under the Prime Ministership of General Kriangsak Chomanan, then Commander-in-Chief of the Army, moved successfully to consolidate Thailand's external position by improving and stabilizing relations with Thailand's Indochinese neighbors and by strengthening relations among its ASEAN partners. The constitutional assembly under the interim constitution promulgated a new constitution in December 1978, and elections were held on April 22, 1979. No party won a majority of the seats in the lower house; the largest block, some 82 seats out of 301, was won by the Social Action Party led by former Prime Minister Kukrit Pramoj. Since ministers are not required to come from the legislature, General Kriangsak was selected by a majority of the combined houses of parliament. The upper house was appointed and contained mostly Kriangsak supporters. After nearly a month's negotiation, Kriangsak was able to form a coalition government of 29 ministries, including 10 without portfolio in the Prime Minister's Office. Many personalities from the previous cabinet remain, although some with

/1 Parts I and II of this report are essentially the same as those contained in the recent President's Report for the Northern Agricultural Development Project (P-2410-TH), dated May 30, 1979, submitted to the Executive Directors under cover of Secretary's Memorandum IDA/R79-70.

different responsibilities. The composition of the Government and Kriangsak's statements indicate that this Government will continue the emphasis of the previous one on rural development and poverty alleviation, although it necessarily represents a more delicate balance among contending political forces than its predecessor.

4. A broad concensus has developed over the last several years on the priorities for socioeconomic development as expressed in the country's Fourth Five-Year National Economic and Social Development Plan (1977-81). There is now increasing concern to achieve a widespread distribution of the benefits from growth. In the past several years the Government has initiated efforts to increase the flow of public resources to the poor rural areas, including the Tambon program of direct transfers to villages in 1976, the drought relief program in 1977, and the flood relief program in 1978. All these programs have been designed to produce quick and visible results, the latter two in response to specific crises, but they were also aimed at increasing production capacity in rural areas and demonstrating the concern of the Central Government for the plight of the rural population. There is an increasing realization that an improvement in the conditions of the poorest farmers and those living in the more remote areas is not only desirable in itself, but would also counteract political instability in the long run. The new government has yet to define its new programs but no break from these trends is foreseen. The recent developments in Indochina and the arrival of refugees have occupied the new government's attention and coping with these problems will probably lead to some reallocation of resources to refugee relief and to strengthening Thailand's military position in border areas. It is too soon to tell what the effects of these developments will be on other programs.

Past Socioeconomic Trends and Recent Changes

5. Thailand's economic performance since 1960 has been good. Although there has been some deceleration in recent years, the average annual growth rate of real GDP from 1960 to 1978 was 7.5%, or about 4.4% per capita. Real agricultural growth of 5% was a leading factor sustaining this expansion. The cultivated area increased by about 4% per year, water control was improved, irrigation expanded and the cultivation of relatively new crops including maize, cassava, kenaf, sugar and rubber grew rapidly. Agriculture has also been a major contributor to export growth. The Government maintained economic and price stability throughout the period and encouraged private savings and investment. As a share of GDP, domestic savings fluctuated between 19% and 24%, and total investment between 20% and 27%. The high level of private investment contributed to a real industrial growth of 10% and a real growth of manufactured exports of 30% per year since 1970. All this was achieved with a limited inflow of foreign resources; until recently the resource gap remained below 5% of GDP, and in most years it was considerably smaller.

6. The growth in incomes has, however, not been evenly distributed throughout the country and at present there are very significant regional differentials in incomes and access to economic and social infrastructure. While the regions are very different in terms of topography, climate, soils, urbanization, etc., and present quite distinct problems for future development, there appears to be a close correlation between development and proximity to urban centers. The Central Region, including Bangkok, has the highest per capita income and is better served by roads, telecommunications, schools, public health and other services than the other three regions, the North,

Northeast and South. The incidence of poverty is estimated at only around 10% in the Center, around 25% in the North and South, and around 35% in the Northeast. Within the regions also there is considerable variation: farmers who have diversified into cash crops have generally enjoyed substantial growth in real incomes while the incomes of those who have been unable or unwilling to shift out of subsistence rice culture have stagnated. Recent research has shown that the lack of cropping patterns and agricultural techniques appropriate to the land and climatic conditions is a major factor in much of the rural poverty. This is most conspicuously the case of the rainfed rice farmers in the Northeast and North. Since there is a well-functioning labor market, the low incomes of this large group have tended to depress unskilled wages throughout the economy.

7. Overall, the rate of GDP growth declined in the 1970s to 7.1% p.a. compared to 8.3% in the 1960s. In addition to external factors (the oil price increase and its aftermath), the major domestic factor responsible for this deceleration is the increasing scarcity of land. Production has been pushed into less fertile soils causing a decline in the rate of agricultural growth to about 4.6% p.a. since 1970, compared to 5.7% in the 1960s. During 1973 and part of 1974, this secular deceleration was hidden by very high prices for Thailand's main export products and a domestic investment boom. This was accompanied by rapid domestic inflation, which led the Government to curtail sharply the public investment program in 1974 and 1975. Price stability has since been restored and private domestic investment remains high at 17-18% of GDP. The economy expanded rapidly in 1978 and inflation again threatens to become a serious problem. The economy has demonstrated considerable resiliency in the face of the political uncertainty that has existed in Asia over the past decade.

8. Thailand's terms of trade and agricultural export prospects are now less favorable than in the early 1970s. Thailand is facing severe restrictions on two of its major exports to the European Economic Community - cassava and canned pineapple, and its sugar exports are limited by the International Sugar Agreement. The balance of payments, which recorded surpluses in 1973-74, has since been running large deficits. The current account deficit reached \$1,241 million, or 6% of GDP, in 1978. The Government has significantly increased its foreign borrowing from traditional sources, from the Eurodollar market and from the IMF to finance these deficits. Foreign exchange reserves have also been used extensively. To contain the balance of payments deficit, the Government, in March 1978, raised tariffs on 141 "nonessential" imports and increased excise taxes on a number of items, most notably gasoline. It raised the gasoline price again in February 1979 and started an energy conservation program to try to contain the oil import bill.

Objectives, Constraints and Prospects

9. Thailand is currently in the third year of its Fourth Five-Year Development Plan (1977-81). The first two Plans concentrated on providing necessary economic infrastructure to facilitate and accommodate the rapid growth that was taking place in the economy. The strategy proposed in the Third Plan moved beyond the previous Plans to "alleviate problems related to the widening income gap and inequitable distribution of social services." However, actual budgetary allocations have not always reflected these priorities, and there has not been a major shift in expenditure patterns. The

concentration of senior staff of the ministries in Bangkok and the high degree of centralization of authority at the departmental level have been major factors impeding reallocation of resources. There is little regional delegation of authority, and the close cooperation within and among ministries necessary to implement poverty-oriented development projects has been lacking. These problems have been recognized and the Government is implementing a number of long- and short-term measures to improve its development administration and expedite project execution, including a major reform in 1976 of the civil service personnel, planning and staffing procedures, establishment of special project committees, and implementation of a revolving fund scheme to speed implementation of Bank-assisted projects. Further improvements in development management is one of the principal objectives of our policy dialogue with the Government.

10. The Fourth Plan continues the shift in emphasis started in the Third Plan. Its principal objectives are achieving 7% real growth, equitable distribution of income, reduction in the rate of population growth, faster generation of employment opportunities and balanced regional development. Projected public sector development expenditures amount to \$12.5 billion for the Plan period, a 90% increase in real terms over the Third Plan. However, the Plan addresses sectoral issues and strategies only in broad terms, and concrete policies and programs to meet the Plan's economic and social objectives remain largely to be defined. The Bank and agencies of the Government are undertaking a number of studies to help design policies and programs to achieve the Fourth Plan objectives. These studies are focusing on problems of unemployment, income distribution, industrial policy, and regional development. The Bank will be supporting a Provincial Planning program, and the National Economic and Social Development Board has just initiated a New Village Development Program, designed to engage wider participation in the design and implementation of small-scale projects, initially in the poorest villages. Japan has committed some \$70 million to support the first two years of this program.

11. In looking ahead towards the 1980s, it is clear that many of the positive features which helped sustain a rapid rate of economic growth over the past two decades will continue to contribute to future growth: these factors include a relatively equitable distribution of rural land, responsiveness of Thai farmers to improved technology, provision of infrastructure by the Thai Government, and the dynamism of the private sector in both industry and agriculture. Also major gains have been made in family planning in recent years, slowing the annual rate of population growth from 3% during the 1960s to 2.5% in 1977.^{/1} The target for 1981 is 2.1%.

12. However, some less favorable domestic factors are also emerging. As a result of very rapid population growth in the last decade, the labor force is expected to grow at 3% over the next decade, necessitating a very high rate of job creation. Past growth has benefited some households a great

^{/1} This is a further decline from the 2.9% average growth recorded in Annex I for the period 1970-76.

deal and others not at all, creating further income disparities that could threaten the social cohesion of the country. At the same time, additional fertile land, which has supported the growth of agricultural production and exports in the past, is becoming increasingly scarce. In view of these factors, continued reliance on the past pattern of development would lead to a deceleration of agricultural and overall growth in the next decade, resulting in persistently large balance of payments deficits, higher rates of unemployment or underemployment, and stagnating or declining real incomes of the poorer segments of the population, especially in rural areas and among unskilled workers. Thus, a shift in the development pattern is necessary not only for social but also for economic reasons.

13. The key development issue in Thailand is how to shift the economy from a pattern of growth based on the extension of land under cultivation and on import-substituting industries to one based on increasingly intensive use of land and on industries producing for domestic and export markets under competitive conditions. Effective policies and programs will be necessary to ensure that economic growth is maintained and income disparities reduced, or at least not widened during this period of transition. In the past, the Government's role has been confined to largely short-term economic management, where its performance has been good, and to the provision of basic economic and social services. In order to achieve a relatively smooth transition, the Government will now have to undertake more coordinated policies and actions on a long-term basis.

14. Agriculture will continue to be a crucial sector since it directly generates 30% of GDP, provides about 70% of total exports, employs 75% of the labor force, and provides a livelihood for 80% of Thailand's population. Future growth of the sector will have to be based on more intensive utilization of cultivated areas, continued diversification of crops, improved cropping patterns and farming practices, and the availability of agricultural credit. All of these imply an increased government role in the rural sector. As a matter of high priority, special programs will have to be employed to accelerate income growth of those who have not benefited from recent economic growth. These programs should aid the development of upland and rainfed lowland areas through research, extension services and rural infrastructure development. In addition, wherever technically feasible, irrigation development, with the associated introduction of high-yielding varieties, greater use of fertilizers and other commercial inputs should be continued. The Bank's lending program is being reoriented to support these efforts.

15. While growth in the agricultural sector may be expected to remain fairly rapid for some time to come, the burden of sustaining future growth will have to shift progressively to the industrial sector. Industry, construction and services will have to provide an increasing share of employment for the growing labor force. Greater effort will be required to encourage the location of industries outside Bangkok and to promote small-scale and rural industries. While continued growth of manufactured exports is essential, the large domestic market also offers opportunities for a balanced industrial growth based on production of consumer goods, agricultural inputs, and processing of agricultural outputs for urban consumption and

export. Our policy dialogue will concentrate on efforts to reduce price distortions, increase the availability of credit, and eliminate impediments to efficient production for domestic and foreign markets so that the dynamic private sector can realize its potential for spurring growth and creating jobs.

16. The Consultative Group for Thailand met in Paris in December 1978, under the chairmanship of the Regional Vice President, East Asia and the Pacific Regional Office. The Group noted with satisfaction the positive results of past development efforts in Thailand as summarized in the recently issued economic report (2059-TH). The Group also supported the conclusions of the report and of the analysis of the Thai delegation, led by the Minister of Finance, that major new efforts were needed to reduce the incidence of poverty and to maintain the past rates of growth. Programs to accelerate rural development, raise productivity, and thereby accelerate poverty alleviation were called for as the first priority. In addition, it was recognized that expanding industrial production along the lines of Thailand's comparative advantage was essential to the country's long-term prosperity. The Thai delegation presented the New Village Development Program to the donors and it was favorably received.

Resource Requirements

17. The implementation of policies needed for a satisfactory rate of economic and social progress will necessitate a steady increase in public expenditures over the next few years. This will require much greater efforts to mobilize both domestic and external resources than in the past. Government domestic revenue as a percentage of GDP (15.5% for 1974-78) is low compared to other developing countries at similar levels of development due to low tax rates, high exemptions and a somewhat below-average rate of compliance. The Government has achieved a modest improvement in resource mobilization through revision of the tax structure and improved collections. It is currently exploring other forms of taxation such as the value-added tax. Such changes would facilitate a reduction in export taxes on rice and other commodities which have inhibited agricultural growth.

18. During the coming 5-10 years, the demands for external resources is likely to increase as the cost of reducing the present resource deficit through a reduction in public investment would be high in terms of growth and employment opportunities foregone. Despite an average real growth of exports in excess of 8% and a modest improvement in the terms of trade, large trade and current account deficits are expected through the mid-1980s due to the needs for capital-goods imports for industry and for modern inputs to raise agricultural productivity. In the longer term, the exploitation of the natural gas fields in the Gulf of Thailand, further development of its lignite resources, the continued growth of manufactured exports and the development of Thai industries should restore external equilibrium and significantly reduce the current account deficits in the second half of the 1980s. Although the levels of foreign borrowing needed to finance these deficits are high in relation to Thailand's past experience, they are not high in relation to the current needs of the Thai economy or in comparison with other countries

at a similar stage of development. With a dynamic private sector and a long history of conservative monetary and fiscal policy, Thailand should be able to use the resources effectively and service the external debt.

19. Official donors, particularly Japan and the development banks, have been expanding their programs to meet a part of the rising requirements. The rest has been financed in the Eurodollar market and bond markets, and by the utilization of IMF resources for 1978/79, totalling about \$200 million. The Government has established a Foreign Loan Policy Committee to coordinate and approve all foreign borrowing by the public sector. The Bank of Thailand is establishing procedures for recording private borrowing abroad in order to keep track of total foreign debt. Thailand's external public borrowing requirements to the end of the Fourth Plan period (1981) and the level of concessionality were reviewed at the last Consultative Group meeting. It was agreed that the aid requirements, although high, were consistent with Thailand's development strategy and sustainable by the economy. The need for continued substantial support on concessional terms was emphasized. It therefore seems appropriate to include a limited amount of IDA credits in the Bank Group's lending to Thailand. In addition, external agencies, including the Bank Group, have in recent years increasingly concentrated project lending to Thailand in the agricultural and social sectors that have high social benefits but low foreign exchange savings. To achieve the higher level of external resource transfer that is now required, it is necessary, in selected projects when the foreign exchange component is low, to finance some local currency expenditures.

20. It is likely that by 1985, net disbursements will more than double in current terms for both public and publicly would-be guaranteed borrowing and private borrowing, although in real terms the growth is much less. Even with this increase in borrowing, the debt service ratio on public debt (3.8% in 1977) should remain below 10% through 1985 and decline thereafter. The debt service ratio on total civilian borrowing, public and private, currently about 15%, should not exceed 20%. Given the diversification of Thai commodity exports and the rapid expansion of manufactured exports, these debt service requirements will be within Thailand's capacity and will not endanger its credit standing. It should be noted, however, that these projections assume a significant level of concessional assistance from other donors, particularly Japan, in view of that country's explicit intention to expand its foreign aid program.

PART II - WORLD BANK OPERATIONS IN THAILAND

21. Thailand first borrowed in 1950 for a railway project and, as of June 30, 1979, had received 51 loans amounting to about \$1,371 million, net of cancellations. The sectoral distribution of these loans had been as follows: \$311.5 million for transportation; \$236.4 million for irrigation; \$391.7 million for power/energy and rural electrification (including \$65.8 million for a dual purpose power and irrigation project); \$153.0 million for telecommunications; \$104.0 million for agricultural and rural development; \$79.6 million for urban development; \$52.3 million for education; and \$42.5 million for industry. Thailand has also received six IDA credits: two

credits totalling \$54.5 million for education; one credit of \$25.0 million for rural development; two credits totaling \$12.5 million for irrigation improvement; and one credit of \$33.1 million for a population project. In general, Bank Group-financed projects have been carried out satisfactorily and in accordance with expectations. Annex II contains a summary statement of Bank loans, IDA credits and IFC investments as well as notes on the execution of ongoing projects as of June 30, 1979.

22. Over the past five years, the Bank has shifted its lending to Thailand from a program dominated by investments in traditional infrastructure projects (accounting for over 80% of the lending through FY74) to a program which places increasing emphasis on assisting the Government's efforts to reach the poorer segments of its population more directly. Since FY75, investments in transportation, power, water supply, telecommunications and industry have accounted for about 50% of Bank Group lending and more than half of these, in dollar terms, were for projects specifically designed to benefit the rural population. The proportion of Bank lending to the agricultural/rural sector has trebled, accounting for about 35% of lending operations since FY75. The design of projects in this sector has also changed from exclusively large irrigation projects to a program balanced between irrigation (including land development and support services to the farmer) and a variety of innovative projects to assist farmers outside the central flood plain (rubber replanting, livestock, agriculture extension, research and rural development). Projects in the social sectors which, prior to FY75, were limited to three in education and accounted for 6% of the program, have both diversified and grown; such projects have in recent years included education, population and low-income housing, and amounted to about 15% of the program.

23. The findings of the recent Basic Economic Report not only verify the appropriateness of the shift mentioned above, but also underscore the need to move even further in designing programs which help the rural population, particularly those farmers in rainfed areas who have been largely bypassed by recent economic growth. In the agricultural sector, therefore, the Bank is redoubling its efforts to develop an approach which will help to lift the rainfed farmers out of a subsistence existence. A combination of education, agricultural research and extension, credit and improved infrastructure is foreseen. However, the major problem is the absence so far of a viable package for the poorest and most remote farmers. Expansion and improvement of irrigation systems will continue, with increased emphasis on reaching those farmers with irrigation potential in the Northern, Northeastern and Southern regions. The program of transportation, electrification, water supply and telecommunications projects will also continue to have a rural focus. A key element of the strategy outlined in the Basic Economic Report is the creation of jobs and stimulation of increased economic activity away from Bangkok. The bulk of the Bank Group's urban and industrial lending will, therefore, be directed to projects which enhance the attractiveness of regional urban centers as growth poles for their agricultural hinterlands. Selected projects in Bangkok will be aimed at strengthening agencies providing essential services to the urban populace and the development of low-cost, replicable programs to meet the demands of the dynamic urban sector, particularly the urban poor, without diverting scarce resources from other high-priority development needs.

24. The Bank's strategy of placing an increasing share of its program into projects alleviating poverty and promoting rural development will be difficult to execute without considerable technical assistance toward project preparation. The Bank's regional mission in Bangkok will continue to play a vital role in helping to identify and prepare such projects. Promoting overall growth also has a high priority in Thailand and is a necessary element in the poverty alleviation strategy. The resource requirements for infrastructure development are large and the Bank is concentrating its remaining funds in projects where it can have a catalytic role in effecting policy changes, mobilizing other resources, and directly facilitating growth in rural areas. The Bank is also expanding its support of the industrial sector through its economic and sector work as well as selected projects in order to help promote industrial policy which favors more labor-intensive and dispersed activities to complement Thailand's efforts in poverty alleviation.

25. Bank loans and IDA credits, disbursed and outstanding, amounted to \$365 million, as of December 31, 1977, representing about 38% of public external debt (disbursed and outstanding). This is not excessive in view of Thailand's modest overall public external debt (8.3% of GDP in 1978). In addition, although the level of Bank commitments is expected to increase over the next five years, the Bank Group's share is projected to decline below 30% of total public external debt by 1982 as Thailand diversifies its borrowing program. The Bank Group's share in total debt outstanding would fall below 20%, and its share of total debt service would not exceed 10%.

26. As of June 30, 1979, IFC had made commitments totalling about \$83 million in 10 projects in Thailand. IFC's investments have been primarily in industry and in the development of financial institutions which aim at mobilizing domestic resources and providing financing to smaller enterprises. Prospects for increased IFC operations in Thailand have been enhanced by expanding private sector investment activity. In addition, consultations with the Government have identified several areas where IFC's assistance may be needed. These areas include very large and complex projects such as a proposed sponge iron project and a soda ash project to serve the ASEAN community; projects in the petroleum and downstream petrochemical sector; and projects in the agricultural sector. In addition, the Corporation expects to continue to help traditional manufacturing projects and to assist in financial institutions and money market developments.

PART III - THE RURAL SECTOR

27. About 35 million people, or 80% of the Thai population, reside in rural areas and depend primarily on agriculture for their livelihood. The increase in agricultural employment (1.4% per year) has been less rapid than the increase in the rural labor force (3% per year), encouraging rural-urban migration and reflecting the increasing importance of nonfarm rural employment and income. In 1970, about 30% of family income in rural areas came from off-farm sources.

28. The volume of agricultural production in the period 1970-76 grew by 4.3% p.a., down from 5.4% in 1960-70, with about 75% of output accounted for by crop production, 4% by forestry, and the balance by livestock and fisheries. Most of this recent growth has come from expansion of the cultivated area since major crop yields have changed little on a national basis and the cropping intensity remains low at 76%. Rice has become relatively less important in agricultural value added (declining from 51% in 1960 to 39% in 1975), while upland crops, particularly maize and cassava, have contributed a larger share of total output. Maize and cassava exports together are now almost approaching the value of rice exports. Some 1.8 million ha of rice land is irrigated and close to 0.4 million ha of this is double cropped to rice in the dry season. To meet the domestic demand and maintain Thailand's share of the world's export market, rice production from irrigated lands would have to double from 5.5 million to 12 million tons by 1990. The good overall performance of Thai agriculture is due to area expansion (rather than yield increases), a vigorous private sector, and government investments in infrastructure (roads, water control, ports, electric power, etc.). Until recently, agricultural support services such as research, credit, input supply and extension have been given little emphasis. A major effort in such support services will be required to improve crop yields particularly in large areas with difficult climatic conditions.

29. Average incomes of farm households increased to \$850 p.a. (\$142 per capita) in the period 1970-76, mainly due to an increase in the average crop area per farm and higher relative prices for farm products. There are significant disparities in farm income between the 19 different agro-economic zones, mainly due to an unequal resource endowment (but also to past investment), with the highest incomes being realized in areas of irrigated agriculture in the Central Region and the lowest in the North and Northeast.

30. Despite agriculture's overall good performance during the past 15 years, about one third of the rural population remain poor in absolute terms (absolute poverty in Thailand is defined by the Bank as a per capita income of less than \$90 p.a.). Moreover, as readily accessible arable land reserves are exhausted, continued rapid growth of this sector will be more difficult to maintain. The period of easy accessibility to new land is now drawing to a close and, with continued rapid growth of the rural population, the national average farm size may already have begun to decline. About two thirds of all poverty households are in rural areas of the North and Northeast where the major source of family income is rice grown under rainfed conditions. It is in these areas that the land is underutilized (low cropping intensity), that physical infrastructure is least adequate, and that agricultural and social support services tend to be the weakest. It is also here that opportunities for nonfarm employment are the most limited.

Strategy for Development

31. There is growing concern in the Government over the emerging issues of longer-term development of the rural sector. The Government is increasingly stressing the need to achieve greater spatial balance in economic growth and to ensure that all socioeconomic groups benefit from the growth process. The Fourth Plan details agricultural sector strategies that aim to expand the value added in agriculture by 5% p.a. These are: (a) intensi-

fication of production in presently cropped areas; (b) diversification through expanding the livestock, fruit and vegetable subsectors; (c) limiting the rate of deforestation and expansion of cultivated land to 80,000 ha/year; and (d) emphasizing integrated agricultural development through programs to improve on-farm irrigation, expand agricultural credit, improve input delivery systems and strengthen agricultural extension.

32. As the land constraint becomes increasingly severe, further growth of agriculture and the rural sector generally will depend on progress made in several areas.

- (a) Land Productivity. Because new land coming under cultivation has a lower yield potential, the main source of increased production must come from higher yields and cropping intensities. This will need, in particular, more effective agricultural support services, such as research, extension, credit and marketing which would lead to improved water management and cultural practices and require greater emphasis on infrastructure improvement and maintenance.
- (b) Rainfed Agriculture. The Government needs to expand its effort to develop rainfed agriculture, the subsector that presents the most acute problems of poverty, low yields and natural resource degradation. This requires investment in road construction to improve accessibility of isolated areas, programs of applied research and extension to meet the needs of farmers in different ecological conditions, and an accelerated program of land titling that would provide security of tenure and the motivation to pursue more productive agricultural practices.
- (c) Government Institutions. A major constraint on Thailand's future agricultural development is inadequate planning, implementation and monitoring capacity for both development projects and more general supporting services. This reflects in part the highly centralized nature of government, as well as functional duplication and inadequate coordination among government agencies. There is a particular need to define more clearly the roles of various agencies involved in land development, settlement and land reform.
- (d) Availability of Inputs and Credit at Reasonable Cost. In recent years there have been shortages of fertilizers. In addition, fertilizer prices are about the highest in Asia, which causes farmers to use less than the recommended quantities and this has resulted in low yields for many crops. Despite the rapid expansion in the amount of institutional credit available to agriculture, the small farmer in Thailand generally continues to experience difficulty in obtaining adequate crop production credit at reasonable terms.

Bank Involvement

33. Agreement between the Bank and the Government on the problems and development prospects of the rural sector has led to a gradual shift in Bank lending to meet the changing character of the sector's development needs.

Until the early 1970s, Bank lending was concentrated on transportation infrastructure and irrigation, with these two sectors accounting for about 60% of total Bank lending to Thailand through 1973. The recent Bank emphasis has been on strengthening government institutions in agriculture and rural development, and on laying the foundation for continued diversification of the agricultural sector. Lending in the past few years has included support for agricultural extension, pilot research programs, livestock development, rubber replanting and rural development, in addition to irrigation. The project now proposed, together with research and credit projects currently being prepared, aim to strengthen essential rural institutions, while rural development projects in the North and Northeast represent initial efforts to assist the Government to develop improved production technologies for rainfed areas. The livestock and rubber projects are aimed at diversifying the sector, and increasing the productivity and incomes of poorer farmers.

Agricultural Extension Services

34. The Department of Agricultural Extension (DAE) in the Ministry of Agriculture and Cooperatives (MOAC) provides extension services for most agricultural crops. Within MOAC, the Departments of Livestock Development, Fisheries, Land Development and Cooperative Promotion provide these services for animal husbandry and pasture and forage production, aquaculture, land development, and the agricultural cooperatives, respectively. The Tobacco Monopoly and at least one private company operate efficient extension services for tobacco growers; in rubber replanting schemes, the Rubber Replanting Aid Fund provides extension services to smallholders until the second year of tapping; and some sugar factories provide a minimal extension service to farmers growing cane on contract. Extension services provided by different organizations do overlap in some districts, but efforts are being made to ensure coordination.

35. Although agricultural research in Thailand needs to be better focussed and strengthened, available research information from both local and overseas sources is disseminated by the extension service to the Thai farmers. An objective of the agricultural research project currently being prepared would be to strengthen and coordinate research, both at the national and regional levels. One of the most pressing immediate needs in the project provinces is the lack of experienced and pragmatic Subject Matter Specialists (SMS). The present small pool of SMSs is unable to provide adequate technical support to the district extension personnel, particularly in view of their lack of access to transport. The SMSs also rarely have sufficient time to mount training programs or to establish the regular contact with research personnel needed to keep them informed of new developments. This is being remedied under this project and the proposed national agricultural research project.

36. Under the first extension project (Loan 1393-TH) the overall organization of DAE was strengthened, both at headquarters and in the six geographic regions. The first extension project covers 33 of Thailand's 72 provinces and improved extension services have already been introduced in the first 25. The last 8 provinces will be incorporated under that project by the end of 1980. Under the national agricultural extension program, the

extension agent (EA) to farmer ratio is being improved from about 1:2,700 to about 1:1,000 and a regular system of fortnightly staff training and visits by EAs to farmer groups (training and visit system of extension) is being introduced. Staff appointments have been satisfactory, with some 1,500 additional EAs having been appointed to date, and only in a few provinces with a high security risk are the number of EAs short of targets. Staff training programs are up to date and there is an excellent adherence to the strict rounds of visits to farmer groups. Farmer response has also been encouraging. Rates of adoption of extension recommendations have been greatest in areas with a low risk of crop failure, but attempts to diversify cropping and to improve cultural practices, especially with improved crop varieties, are also successful in drought-prone areas. In four provinces in the Northeast, for example, the area of dry-season rice has increased from 1,800 ha to 10,500 ha producing an average yield of 3.1 ton/ha in 1978. For 1979 a total of almost 27,000 demonstration plots, mainly for rice, groundnuts, cotton, corn and mung bean, are planned in 25 provinces. Other promoted activities which have been quickly adopted are the production of straw mushrooms and home garden vegetables. Procurement under the first project is also progressing satisfactorily, although the civil works program fell behind schedule in 1978 when the budget proved inadequate for the planned construction program which was curtailed after repeated attempts of retendering. The revised construction program is expected to be completed on schedule by January 1980.

PART IV - THE PROJECT

Project History

37. When it was found that the Government was able to implement the national agricultural extension program at a rate of about ten provinces per year, and that the initial results were favorable, the 39 provinces not covered under the first phase requested a rapid provision of the same services from the Government. Due to this local pressure and the encouraging field results, the Government approached the Bank for support which would enable a continued rate of expansion of about ten provinces per year. The second phase project was prepared by a special project preparation team in the Department of Agricultural Extension (DAE), with the assistance of a consultant, as part of the first phase project. It was appraised in September 1978 and a postappraisal mission was in Thailand in January 1979. Negotiations were held from June 25 to 29, 1979. The Government delegation was led by H.E. Klos Visessurakarn, Thailand's Ambassador to the United States, assisted by Khun Yookti Sarikaphuti, Director-General, DAE.

Project Description

38. The proposed project would provide frequent and regular agricultural extension services to some 2.3 million farm families in the 39 provinces of Thailand not covered under the first project. The project includes:

(a) continued strengthening of the organization of DAE and establishing clear lines of command and coordination from the national level to the districts; (b) introducing sound extension methodology with emphasis on systematic programming of activities and regular farm visits; (c) increasing the number of extension staff and introducing a program of regular and continuous training; and (d) establishing a monitoring system for continuous evaluation of the program. To accomplish these objectives, the project provides for: (i) the construction of regional training centers, provincial and district extension centers, and housing for extension workers in remote areas; (ii) the procurement of vehicles, equipment and materials; (iii) the employment of consultants; and (iv) a limited number of fellowships and overseas training tours. Project details are provided in the report entitled "Thailand - Appraisal of the Second National Agricultural Extension Project (No. 2420-TH dated July 16, 1979) which is being distributed separately to the Executive Directors. Supplementary project data are given in Annex III.

Organization and Management

39. The proposed project will be implemented by DAE in close collaboration with the provincial governments. The Director General will be assisted by three Deputy Directors General with clear functional responsibilities for headquarters administrative divisions, technical and professional divisions, and the nine extension regions and the training division, respectively. Under the proposed project a new position of Deputy Director General for Extension Operations and Training will be established, mainly for supervising and coordinating the actual execution of extension services in the regions. For ease of management, three of the present six regions will be subdivided so that each of the nine regions will have seven or eight provinces. Each region will be headed by a regional extension officer who will be responsible for implementing all agricultural extension services through provincial and district extension officers under his jurisdiction. To ensure overall coordination and uniform implementation of the training and visit system of extension, an Office of Inspectors will be established with nine Inspectors appointed to act as advisers to the regional extension services; they will report directly to the Director General. Project would be implemented mainly by the Planning and Special Projects Division under the Deputy Director General for Administrative Services. The present Training Section in the Planning and Special Projects Division will be upgraded to a Training Division and it will be responsible for the in-service training of all extension staff. Satisfactory assurances have been received regarding the appointment of a Deputy Director General for Extension Operations and Training by December 31, 1979, the establishment of a training division in DAE by March 31, 1980, and the establishment, by March 31, 1980, of procedures satisfactory to the Bank to ensure coordination and uniform implementation of a training and visit system of agricultural extension nationwide (Sections 3.06 and 3.07 of the draft Loan Agreement).

40. As under the first extension project, field level extension services will be organized and directed from the district extension center by a district extension officer, assisted by a deputy, who together will be

responsible for supervising all EAs in the district. Each EA will generally be responsible for extension activities in one subdistrict with about 10 villages and about 1,000 farm families. The actual number of villages per subdistrict ranges from 5 to 14. The number of EAs assigned to a district will depend on the number of villages, the distance and the difficulty of terrain between the villages, and the homogeneity of farming activities in the area. All EAs will be agricultural generalists with a five-year vocational training and recruited, wherever possible, from rural areas. Home Economics Agents (HEA), one per district, will work with women groups.

41. Subject Matter Specialists (SMS) will function as trainers of all district extension personnel and support them in their field work. SMSs will divide their time equally between staff training, contact with research, and field support of EAs. Initially, only two SMSs per province will be appointed, one for crop production and one for crop protection. In the third and fourth year, additional SMSs will be appointed for the major specialist crop in the province (rubber, cotton, or horticulture) and for a major service such as farm mechanization or farm management.

42. A National Coordinating Committee for Agricultural Extension was established under the first extension project to coordinate the activities of DAE with related programs administered by other agencies, such as those providing extension services in specialized fields, or those affecting the supply of inputs and irrigation water, the provision of credit, produce marketing or land development. This Committee, chaired by the Under Secretary of State for Agriculture, will continue to function and has already reviewed and approved all details of the proposed project.

Extension Methodology

43. The project provinces include some 7 million ha of farm land (mainly rainfed) of which about 5.3 million is harvested annually. The average farm size is 4.7 ha and about 60% of the harvested area is planted to rice, 10% to maize, 5% to cassava, 4% to sugarcane, 12% to rubber and 9% to other food and industrial crops, fruit and vegetables. Extension services will attempt to convey simple improvements in agricultural practices to the 2.3 million families farming this land. Such advice will concentrate on the production of rice, cassava, maize, kenaf, cotton and mung beans, although emphasis will initially be placed on one or two major crops in each region. Advice will cover the entire production cycle, including selecting appropriate seed varieties and sources, obtaining correct plant stands, selecting appropriate fertilizers and pesticides and applying them correctly, preliminary processing of output (i.e. chipping cassava or retting kenaf) to a reasonable standard of quality to ensure marketability, obtaining institutional credit at reasonable interest rates and marketing. This focussing of extension effort on a few critical practices relating to the major local crops, and on aspects where the probability of quick results is greatest - such as planting the best available crop varieties at the correct time and the suitable plant density or controlling pests and diseases - will improve the chances of holding the interest and enthusiasm of both the farmers and the extension workers.

Staffing and Training

44. To ensure that DAE has sufficient manpower at various levels, extension personnel in the 39 project provinces will be increased significantly. Most importantly, a total of about 1,800 additional staff, of which about 1,200 would be EAs and 240 HEAs, will be recruited, improving the effective ratio of district extension personnel to farm families within the proposed project provinces from approximately 1:2,200 to 1:1,000. To provide the needed technical training of field staff, an additional 120 SMSs would be employed, while the organization of technical instruction sessions and training programs would be carried out by a provincial training officer. Adequate candidates both for extension and support are, or will be, available from university graduates and vocational school diplomates. The Government has given appropriate assurances regarding the staffing of the project (Section 3.08 of the draft Loan Agreement).

45. On appointment, all staff assigned to the proposed project will undergo a two- to eight-week preservice orientation course. District extension officers and EAs will undergo about two weeks of annual in-service training, in addition to their fortnightly technical instruction sessions. Courses for EAs would focus on the practical agricultural problems faced by farmers in the region and technically simple solutions to those problems, while those for district extension officers will also include administrative problems and practices. Where possible, trainees will participate in demonstrations to gain a full appreciation of the work involved. SMSs will attend annual four- to six-week courses in specialized agricultural disciplines.

Monitoring and Evaluation

46. To gauge the results of the extension methodology employed, a special monitoring unit was established under the first extension project. The unit is jointly supervised by the Chief of the Division of Agricultural Economics in MOAC and the Chief of Planning and Special Projects Division in DAE. It receives technical and computer assistance from the National Statistics Office and from the Australian Development Assistance Bureau which is providing technical assistance in the design of questionnaires and the analysis and interpretation of data. The monitoring unit will continue to operate but the method of survey, the structure of the questionnaire, and the method of data analysis will be refined in early 1980 following a thorough review of results obtained under the first extension project. Project monitoring and evaluation will be carried out under procedures agreed with the Bank (Section 3.04(d) of draft Loan Agreement).

Extension Centers and Housing

47. Two new regional training centers will be constructed under the proposed project in the eastern and (upper) southern regions. These facilities will form the administrative and training centers for each of the regions and will include classroom accommodation for about 60 students, office accommodation for all training staff, regional supervisory staff and regional SMSs. Twelve housing units will be provided at each center. All other

regions will have adequate training facilities once the first project is completed. Thirty-nine combined provincial and district extension centers and 271 district extension centers will also be constructed. Each provincial extension center will provide office accommodation for about 25 provincial and district extension staff, a meeting hall, and storage facilities for training and demonstration material. District extension centers will provide office space for about four district staff, a meeting room, and storage space for extension field equipment. In addition, some 310 housing facilities (each including three apartments) will be constructed for EAs in remote areas, where housing is difficult to obtain. All project buildings will be constructed to standardized designs.

Vehicles and Equipment

48. Each of the 2,300 EAs and all HEAs and deputy district extension officers in the project provinces will be provided with a small motorcycle to assure the mobility required to meet the schedule of field visits, training and supervision. Regional, provincial and district extension offices will be provided with vehicles, which will be used to transport training personnel and materials, as well as experiment and demonstration equipment. Government workshops, which are available in most of the districts, will be used for maintenance and repair of all project vehicles and equipment, supplemented by private workshops where necessary. The Government will make motorcycles, financed under the project, available to DAE extension agents and other eligible staff under a hire-purchase scheme, which was introduced under the first project and which is satisfactory to the Bank. Basic office and training furniture and equipment will be provided for the regional training centers and provincial and district extension centers to be constructed under the project, and for existing centers where they are lacking.

Consultant Services

49. Agricultural Extension. As under the first phase project, DAE will engage an agricultural consulting firm to assist with the implementation of the proposed project under terms and conditions acceptable to the Bank. The firm will provide a team leader experienced in agricultural extension to assist in overall project implementation at DAE headquarters, and six extension consultants to serve as advisors in the regions. The present team leader has been engaged until mid-1981, and he or his replacement will be required under the proposed project until June 30, 1983. Each region will also be provided with an additional two years of services by an extension consultant. A total of 207 man-months of consulting services will be required, of which about half are expected to be provided by foreign consultants and half local. Based on present consulting contracts the cost per man-month, including local costs, is estimated at \$5,000 for local consultants and \$8,000 for expatriate consultants.

50. Civil Works. A local engineering firm with expertise in architecture will be employed under terms and conditions acceptable to the Bank to assist DAE in the site surveys, preparation of tender documents and contracts, and supervision of construction of the centers. Consultant costs are estimated

and supervision of construction of the centers. Consultant costs are estimated at 4% of construction costs. Sufficient suitable government land is available and will be transferred to the project six months before construction commences at each of the center and housing sites.

Fellowships and Overseas Training

51. The proposed project includes a fellowship and training program to improve the quality of extension staff, particularly that of the SMSs, but also that of some EAs and supervisory staff. This program will award two or three fellowships per annum to overseas universities, and a further 10 SMSs per year will follow specific subject matter courses of about 6 months' duration in neighboring countries. Candidates will be selected for such programs as the rice production and multiple cropping courses at the International Rice Research Institute in the Philippines and the vegetable production training course conducted by the Asia Vegetable Research and Development Center in the Republic of China. Recipients of long-term fellowships will be obligated to remain in government service for twice the duration of their fellowships, in accordance with present regulations. About 120 extension personnel will participate in short-term study tours to other Asian countries will be provided for promising extension workers to observe innovative and successful farm practices and extension work.

Project Costs and Financing

52. The total project costs are estimated at \$70.0 million, of which \$22.0 million or 31% represents foreign exchange. Incremental operating costs, including salaries for new staff positions and operating and maintenance costs of project buildings and equipment, are included in project costs. All prices are expressed at June 1979 levels. Physical contingencies of 10% are included for civil works, furniture and equipment because of: the large number and the wide geographic spread of centers and houses to be built; the need to allow some flexibility in meeting the requirements of the different centers; and the different types of extension, training, and experimental equipment required for the various agricultural enterprises in the provinces. Expected price increases due to inflation amount to about 19% of total project costs and assume the following annual inflation rates: for salaries 5% (1980-84); for equipment, services and incremental operating costs 6% (1980-84); and for civil works 12% (1980), 10% (1981), 9% (1982) and 8% (1983-84). Taxes of \$4.2 million are included in project costs.

53. The proposed Bank loan of \$40 million, equivalent to 61% of total project costs net of taxes and duties, would cover the foreign exchange requirement of \$22 million and \$18 million of the local cost of the project. The Government will finance the remaining \$30 million. Annual operating costs for DAE attributable to the two extension projects will amount to about \$21 million (constant June 1979 prices at project completion); this is equal to about 5% of MOAC's total budget for FY79. The Government has confirmed that sufficient funds will be provided after project completion to ensure the program continues to be adequately staffed and operated (Section 4.04 of draft Loan Agreement).

Procurement

54. All civil works (with a total cost of about \$23.0 million) would be grouped, to the extent practicable, into suitably sized contract packages of \$100,000 or more to permit efficient execution and supervision. They would not be suitable for international competitive bidding because individual buildings are small and dispersed, both geographically and over time. These contracts will be awarded on the basis of competitive bidding advertised locally in accordance with government procedures satisfactory to the Bank. There is adequate competition among local contractors for works of this kind and size. Foreign firms would also be allowed to bid. In provinces where it is difficult to obtain suitable bids because of security and/or isolation, prudent shopping (in accordance with local procedures) requiring three price quotations from reputable construction firms would be allowed.

55. DAE will be responsible for the procurement of vehicles and equipment. Standard items to be purchased in volume, including about \$4.9 million worth of vehicles and \$2.5 million of equipment and materials, will be grouped in large tender packages (averaging about \$250,000) and procured following international competitive bidding in accordance with Bank Group Guidelines. A preference margin amounting to 15% of the c.i.f. price of imported goods or the prevailing customs duty, whichever is lower, would be extended to local manufacturers in the evaluation of bids. To permit flexibility in procurement, items costing less than \$15,000 each, but not exceeding \$500,000 in total, may be procured on the basis of prudent shopping locally, including a minimum of three price quotations from reputable suppliers. Specialized items to be purchased in small quantities (such as equipment for field experiments and home economics) worth a total of about \$800,000 and furniture worth a total of about \$400,000, will be purchased following local competitive bidding procedures acceptable to the Bank.

Disbursements

56. Disbursements will be made at the rate of 100% against the foreign exchange cost of directly imported equipment, materials and furniture; 100% of the ex-factory price of such items manufactured locally, and 65% of total expenditures for items procured locally. For consulting services, overseas training and fellowships, disbursements will be at the rate of 100% of total cost. Disbursements for civil works will be at 74% of total expenditures, submitted by DAE after certification by the consulting firm. It is expected that disbursements would be completed by December 31, 1985.

Benefits and Risks

57. The proposed project will reach about 2.3 million farm families, who cultivate some 3.1 million ha of rice (46% of Thailand's total) and about 2.3 million ha of other food, oil, fiber and vegetable crops. Yields of most crops are low and considerable increases could be achieved if farmers made use of available knowledge and inputs. All farmers stand to benefit from direct or indirect contact with extension workers, who will convey the most practical and profitable advice for their crop production enterprises,

but the poorest farmers stand to gain the most from the proposed project. In the past, extension services have been provided mainly on request; typically, the better educated and more affluent farmers, who have better contacts and capital to invest in inputs, have availed themselves of these services to a much greater extent than have the mass of poorer smallholders. As the proposed project is designed to reach all smallholders in the project provinces, no matter how remote from provincial and district capitals, the gap in productivity between smallholders and better educated farmers should be narrowed by the project. Project costs average about \$32 per farm family and \$13 per ha, and the incremental annual operating costs at project completion are low at about \$4.70 per farm family and \$1.90 per ha.

58. It is not realistic to attempt to quantify precisely the proposed project benefits since it is impossible to determine what proportion of the expected benefits from improved agricultural practices is due to extension alone, and what is due to additional purchased inputs, to a greater input of labor by the farmer and his family, or to improved irrigation. In practice, it is a combination of these which provides increased yields and farmer income, with the extension service playing a catalytic role. The determination of acceptance rates of recommended practices is also extremely difficult because farmers may adopt some, but not all, recommendations. A hypothetical rate of return calculation does indicate the order of magnitude of benefits the proposed project would need to generate. In order to realize a 15% economic rate of return, the incremental production value per hectare would have to amount to \$4.20 per year for all crops on a total area of 5.4 million ha from 1988 onwards. For paddy, which is grown on 59% of the proposed project area, this translates to an increase of about 26 kg/ha (based on an average 1978 economic price for paddy of \$165/ton). The estimated benefits are conservative as the yield potential of rainfed paddy using present knowledge and limited inputs is estimated at 2,200 kg/ha, while an increase of only 26 kg/ha by 1988 (or an average total yield of 1,914 kg/ha) have been projected. These latter figures should be relatively easy to obtain when improved varieties, increased rates of fertilizer usable and improved cultural practices are introduced and adopted by farmers. Since many farmers grow two crops per year in irrigated areas, upland crops on nonpaddy soils, or secondary crops following the main crop, the potential benefit from improved extension activities is considerably greater than that assumed for paddy alone.

59. With a relatively low investment and low annual operating cost per family, which could be easily justified even with a modest increase in yields, the risks associated with the proposed project relate mainly to the rate and degree to which extension recommendations are adopted by farmers. These variables will therefore come under continuous, close scrutiny during project implementation as part of the monitoring and evaluation program and by frequent Bank supervision missions.

Environmental Effects

60. Extension personnel will be continuously trained to give advice on appropriate chemicals for pest and vermin control, on maintenance of the level of soil fertility, and on soil conservation practices. It is expected that the proposed project will therefore have a beneficial effect on the environment.

Role of Women

61. The proposed project will have considerable impact on women in the farming communities served by the extension service. Traditionally, farmers' wives have had considerable influence on the decision-making process for general farm activities and, in particular, for the purchase of seeds and other inputs. Women also form the main source of labor during planting, weeding and harvesting and the introduction of new crop varieties and new crop production technology could actually decrease their workload. The EAs and the HEAs will therefore need to focus their efforts on the farmers' wives and other women in rural communities. About 15-25% of the SMSs and EAs in any particular province are women. In addition, all HEAs are women who are specifically trained for advisory services in home economics.

PART V - LEGAL INSTRUMENTS AND AUTHORITY

62. The draft Loan Agreement between the Kingdom of Thailand and the Bank and the report of the Committee provided for in Article III, Section 4(iii) of the Articles of Agreement are being distributed to the Executive Directors separately.

63. Special conditions of the loan are listed in Section III of Annex III.

64. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Bank.

PART VI - RECOMMENDATION

65. I recommend that the Executive Directors approve the proposed loan.

Robert S. McNamara
President

Attachments

by Ernest Stern

July 23, 1979
Washington, D.C.

TABLE 3A
THAILAND - SOCIAL INDICATORS DATA SHEET

LAND AREA (THOUSAND SQ. KM.)	THAILAND			REFERENCE GROUPS (ADJUSTED AVERAGES - MOST RECENT ESTIMATE) /a		
	1960 /b			1970 /b		
	MOST RECENT ESTIMATE /b			GEOGRAPHIC REGION /c	SAME INCOME GROUP /d	NEXT HIGHER INCOME GROUP /e
TOTAL	514.0					
AGRICULTURAL	179.6					
GNP PER CAPITA (US\$)	100.0	200.0	420.0	450.6	430.3	926.1
ENERGY CONSUMPTION PER CAPITA (KILOGRAMS OF COAL EQUIVALENT)	64.0	247.0	308.0	371.1	262.1	730.7
POPULATION AND VITAL STATISTICS						
POPULATION, MID-YEAR (MILLIONS)	26.4	35.7	43.3	.	.	.
URBAN POPULATION (PERCENT OF TOTAL)	12.0	13.0	14.0	27.4	24.6	49.0
POPULATION PROJECTIONS						
POPULATION IN YEAR 2000 (MILLIONS)			69.0	.	.	.
STATIONARY POPULATION (MILLIONS)			105.0	.	.	.
YEAR STATIONARY POPULATION IS REACHED			2095	.	.	.
POPULATION DENSITY						
PER SQ. KM.	51.0	69.0	84.0	154.8	45.3	44.6
PER SQ. KM. AGRICULTURAL LAND	204.0	251.0	244.0	566.7	149.0	140.7
POPULATION AGE STRUCTURE (PERCENT)						
0-14 YRS.	44.7	46.2	45.0	41.3	45.2	41.3
15-64 YRS.	52.6	50.8	52.0	54.9	51.9	55.3
65 YRS. AND ABOVE	2.7	3.0	3.0	3.3	2.8	3.5
POPULATION GROWTH RATE (PERCENT)						
TOTAL	2.8	3.0	2.8	2.4	2.7	2.4
URBAN	5.1	3.6	3.5	4.3	4.3	4.5
CRUDE BIRTH RATE (PER THOUSAND)						
CRUDE BIRTH RATE (PER THOUSAND)	46.0	42.0	32.0	30.2	39.4	31.1
CRUDE DEATH RATE (PER THOUSAND)	17.0	12.0	8.0	8.3	11.7	9.2
GROSS REPRODUCTION RATE	..	3.2	2.2	2.1	2.7	2.2
FAMILY PLANNING						
ACCEPTORS, ANNUAL (THOUSANDS)	..	203.0/k	527.0	.	.	.
USERS (PERCENT OF MARRIED WOMEN)	..	27.4	32.3	34.1	13.2	34.7
FOOD AND NUTRITION						
INDEX OF FOOD PRODUCTION						
PER CAPITA (1969-71=100)	68.0	100.0	110.0	106.2	99.6	104.4
PER CAPITA SUPPLY OF CALORIES (PERCENT OF REQUIREMENTS)						
PER CAPITA SUPPLY OF CALORIES (PERCENT OF REQUIREMENTS)	96.0	103.0	107.0	104.1	94.7	105.0
PROTEINS (GRAMS PER DAY)	43.5	52.2	50.0	57.4	54.3	64.4
OF WHICH ANIMAL AND PULSE	8.4	..	14.6	16.9	17.4	23.5
CHILD (AGES 1-4) MORTALITY RATE	15.0	9.0	6.0	4.8	11.4	8.6
HEALTH						
LIFE EXPECTANCY AT BIRTH (YEARS)	51.0	57.0	61.0	61.1	54.7	60.2
INFANT MORTALITY RATE (PER THOUSAND)	..	86.0/l	68.0	46.6	68.1	46.7
ACCESS TO SAFE WATER (PERCENT OF POPULATION)						
TOTAL	..	17.0	22.0	21.9	34.4	60.8
URBAN	..	..	49.0	46.2	57.9	75.7
RURAL	..	..	12.0	12.8	21.2	40.0
ACCESS TO EXCRETA DISPOSAL (PERCENT OF POPULATION)						
TOTAL	..	17.0	40.0	28.4	40.8	46.0
URBAN	..	65.0	58.0	65.0	71.3	46.0
RURAL	..	8.0	36.0	14.7	27.7	22.5
POPULATION PER PHYSICIAN						
POPULATION PER PHYSICIAN	7800.0	8420.0	8370.0	3790.5	6799.4	2262.4
POPULATION PER NURSING PERSON						
POPULATION PER NURSING PERSON	4900.0	3340.0	1510.0	1107.4	1522.1	1195.4
POPULATION PER HOSPITAL BED						
TOTAL	1340.0/f	890.0	800.0	613.3	726.5	453.4
URBAN	..	280.0	240.0	203.6	272.7	253.1
RURAL	..	1380.0	1290.0	1110.3	1404.4	2732.4
ADMISSIONS PER HOSPITAL BED	..	31.0	33.0	23.9	27.5	22.1
HOUSING						
AVERAGE SIZE OF HOUSEHOLD						
TOTAL	5.5/f	5.8	5.5	5.2	5.4	5.3
URBAN	5.3/f	5.9	5.5	..	5.1	5.2
RURAL	5.6/f	5.8	5.5	..	5.5	5.4
AVERAGE NUMBER OF PERSONS PER ROOM						
TOTAL	..	..	2.4	..	..	1.9
URBAN	..	..	2.2	..	..	1.6
RURAL	..	..	2.4	..	..	2.5
ACCESS TO ELECTRICITY (PERCENT OF DWELLINGS)						
TOTAL	..	..	24.6	..	28.1	50.0
URBAN	..	63.0/g	..	..	45.1	71.7
RURAL	..	13.0	..	..	9.9	17.3

TABLE 3A
THAILAND - SOCIAL INDICATORS DATA SHEET

	THAILAND			REFERENCE GROUPS (ADJUSTED AVERAGES - MOST RECENT ESTIMATE) /a		
	1960 /b	1970 /b	MOST RECENT ESTIMATE /b	SAME	SAME	NEXT HIGHER
				GEOGRAPHIC REGION /c	INCOME GROUP /d	INCOME GROUP /e
EDUCATION						
ADJUSTED ENROLLMENT RATIOS						
PRIMARY: TOTAL	83.0	81.0	83.0	97.9	82.7	102.5
MALE	88.0	85.0	86.0	98.7	87.3	108.6
FEMALE	79.0	77.0	79.0	97.4	75.8	97.1
SECONDARY: TOTAL	12.0	18.0	26.0	42.2	21.4	33.5
MALE	15.0	21.0	29.0	46.7	33.0	38.4
FEMALE	9.0	15.0	22.0	40.9	15.5	30.7
VOCATIONAL ENROL. (% OF SECONDARY)	19.0	24.0	13.0	12.5	9.8	11.5
PUPIL-TEACHER RATIO						
PRIMARY	36.0	35.0	30.0	32.5	34.1	35.8
SECONDARY	20.0	16.0	21.0	25.8	23.4	22.9
ADULT LITERACY RATE (PERCENT)	68.0	79.0	82.0	84.1	54.0	64.0
CONSUMPTION						
PASSENGER CARS PER THOUSAND						
POPULATION	2.0	5.0	6.4	6.1	9.3	13.5
RADIO RECEIVERS PER THOUSAND						
POPULATION	6.0	78.0	131.0	84.4	76.9	122.7
TV RECEIVERS PER THOUSAND						
POPULATION	2.3	7.0	17.0	22.4	13.5	38.3
NEWSPAPER ("DAILY GENERAL INTEREST") CIRCULATION PER THOUSAND POPULATION						
	11.0	24.0	..	24.2	18.3	40.0
CINEMA ANNUAL ATTENDANCE PER CAPITA						
	..	..	1.7	3.6	2.5	3.7
LABOR FORCE						
TOTAL LABOR FORCE (THOUSANDS)	12757.0	16163.0	18514.0	.	.	.
FEMALE (PERCENT)	48.3	47.3	46.9	36.7	29.2	25.0
AGRICULTURE (PERCENT)	83.7	79.9	77.0	54.6	62.7	43.5
INDUSTRY (PERCENT)	4.4	6.0	8.0	16.3	11.9	21.5
PARTICIPATION RATE (PERCENT)						
TOTAL	51.3	46.6	45.6	40.7	37.1	33.5
MALE	52.7	49.3	48.6	49.9	48.8	48.0
FEMALE	49.8	43.9	42.6	31.0	20.4	16.8
ECONOMIC DEPENDENCY RATIO	1.0	1.1	1.1	1.1	1.4	1.4
INCOME DISTRIBUTION						
PERCENT OF PRIVATE INCOME RECEIVED BY						
HIGHEST 5 PERCENT OF HOUSEHOLDS	21.8/h	23.8/i	14.0/j	14.9	15.2	20.8
HIGHEST 20 PERCENT OF HOUSEHOLDS	50.9/h	49.7/i	42.2/j	46.8	48.2	52.1
LOWEST 20 PERCENT OF HOUSEHOLDS	6.2/h	6.1/i	7.6/j	6.2	6.3	3.9
LOWEST 40 PERCENT OF HOUSEHOLDS	14.9/h	15.9/i	19.1/j	16.8	16.3	12.6
POVERTY TARGET GROUPS						
ESTIMATED ABSOLUTE POVERTY INCOME LEVEL (US\$ PER CAPITA)						
URBAN	..	..	126.0	193.1	241.3	270.0
RURAL	..	..	94.0	128.7	136.6	183.3
ESTIMATED RELATIVE POVERTY INCOME LEVEL (US\$ PER CAPITA)						
URBAN	..	..	115.0	136.8	179.7	282.5
RURAL	..	..	108.0	96.8	103.7	248.9
ESTIMATED POPULATION BELOW ABSOLUTE POVERTY INCOME LEVEL (PERCENT)						
URBAN	..	..	15.0	32.0	24.8	20.5
RURAL	..	..	34.0	52.5	37.5	35.3

.. Not available
 . Not applicable.

NOTES

/a The adjusted group averages for each indicator are population-weighted geometric means, excluding the extreme values of the indicator and the most populated country in each group. Coverage of countries among the indicators depends on availability of data and is not uniform.

/b Unless otherwise noted, data for 1960 refer to any year between 1959 and 1961; for 1970, between 1969 and 1971; and for Most Recent Estimate, between 1974 and 1977.

/c East Asia & Pacific; /d Lower Middle Income (\$281-550 per capita 1976); /e Intermediate Middle Income (\$551-1135 per capita, 1976); /f 1962; /g Percent of population in Bangkok metropolitan area; /h 1962-63; /i 1968; /j Preliminary data for 1975/76, due to lack of data on national basis, the methodology for aggregating the available regional data overstates incomes of low income groups and understates income of higher income groups. Thus, this data is not suitable for any analytical comparisons; /k Government; /l 1964-1965.

DEFINITIONS OF SOCIAL INDICATORS

Note: The adjusted group averages for each indicator are population-weighted geometric means, excluding the extreme values of the indicator and the most populated country in each group. Coverage of countries among the indicators depends on availability of data and is not uniform. Due to lack of data, group averages for Capital Surplus Oil Exporters and indicators of access to water and excreta disposal, housing, income distribution and poverty are simple population-weighted geometric means without the exclusion of extreme values.

LAND AREA (thousand sq. km)

Total - Total surface area comprising land area and inland waters.
Agricultural - Most recent estimate of agricultural area used temporarily or permanently for crops, pastures, market and kitchen gardens or to lie fallow.

GNP PER CAPITA (US\$) - GNP per capita estimates at current market prices, calculated by same conversion method as World Bank Atlas (1975-77 basis); 1960, 1970, and 1977 data.

ENERGY CONSUMPTION PER CAPITA - Annual consumption of commercial energy (coal and lignite, petroleum, natural gas and hydro-, nuclear and geothermal electricity) in kilograms of coal equivalent per capita.

POPULATION AND VITAL STATISTICS

Total population, mid-year (millions) - As of July 1; if not available, average of two end-year estimates; 1960, 1970, and 1977 data.

Urban population (percent of total) - Ratio of urban to total population; different definitions of urban areas may affect comparability of data among countries.

Population density

Per sq. km. - Mid-year population per square kilometer (100 hectares) of total area.

Per sq. km. agricultural land - Computed as above for agricultural land only.

Population age structure (percent) - Children (0-14 years), working-age (15-64 years), and retired (65 years and over) as percentages of mid-year population.

Population growth rate (percent) - total, and urban - Compound annual growth rates of total and urban mid-year populations for 1950-60, 1960-70, and 1970-75.

Crude birth rate (per thousand) - Annual live births per thousand of mid-year population; ten-year arithmetic averages ending in 1960 and 1970 and five-year average ending in 1975 for most recent estimate.

Crude death rate (per thousand) - Annual deaths per thousand of mid-year population; ten-year arithmetic averages ending in 1960 and 1970 and five-year average ending in 1975 for most recent estimate.

Gross reproduction rate - Average number of daughters a woman will bear in her normal reproductive period if she experiences present age-specific fertility rates; usually five-year averages ending in 1960, 1970, and 1975.

Family planning - acceptors, annual (thousands) - Annual number of acceptors of birth-control devices under auspices of national family planning program.

Family planning - users (percent of married women) - Percentage of married women of child-bearing age (15-44 years) who use birth-control devices to all married women in same age group.

FOOD AND NUTRITION

Index of food production per capita (1970=100) - Index number of per capita annual production of all food commodities.

Per capita supply of calories (percent of requirements) - Computed from energy equivalent of net food supplies available in country per capita per day. Available supplies comprise domestic production, imports less exports, and changes in stock. Net supplies exclude animal feed, seeds, quantities used in food processing, and losses in distribution. Requirements were estimated by FAO based on physiological needs for normal activity and health considering environmental temperature, body weights, age and sex distributions of population, and allowing 10 percent for waste at household level.

Per capita supply of protein (grams per day) - Protein content of per capita net supply of food per day. Net supply of food is defined as above. Requirements for all countries established by USDA provide for a minimum allowance of 60 grams of total protein per day and 20 grams of animal and pulse protein, of which 10 grams should be animal protein. These standards are lower than those of 75 grams of total protein and 23 grams of animal protein as an average for the world, proposed by FAO in the Third World Food Survey.

Per capita protein supply from animal and pulse - Protein supply of food derived from animals and pulses in grams per day.

Child (ages 1-4) mortality rate (per thousand) - Annual deaths per thousand in age group 1-4 years, to children in this age group.

HEALTH

Life expectancy at birth (years) - Average number of years of life remaining at birth; usually five-year averages ending in 1960, 1970, and 1975.

Infant mortality rate (per thousand) - Annual deaths of infants under one year of age per thousand live births.

Access to safe water (percent of population) - total, urban, and rural - Number of people (total, urban, and rural) with reasonable access to safe water supply (includes treated surface waters or untreated but uncontaminated water such as that from protected boreholes, springs, and sanitary wells) as percentages of their respective populations. In an urban area a public fountain or standpost located not more than 200 meters from a house may be considered as being within reasonable access of that house. In rural areas reasonable access would imply that the housewife or members of the household do not have to spend a disproportionate part of the day in fetching the family's water needs.

Access to excreta disposal (percent of population) - total, urban, and rural - Number of people (total, urban, and rural) served by excreta disposal as percentages of their respective populations. Excreta disposal may include the collection and disposal, with or without treatment, of human excreta and waste-water by water-borne systems or the use of pit privies and similar installations.

Population per physician - Population divided by number of practicing physicians qualified from a medical school at university level.

Population per nursing person - Population divided by number of practicing male and female graduate nurses, practical nurses, and assistant nurses.

Population per hospital bed - total, urban, and rural - Population (total, urban, and rural) divided by their respective number of hospital beds available in public and private general and specialized hospital and rehabilitation centers. Hospitals are establishments permanently staffed by at least one physician. Establishments providing principally custodial care are not included. Rural hospitals, however, include health and medical centers not permanently staffed by a physician (but by a medical assistant, nurse, midwife, etc.) which offer in-patient accommodation and provide a limited range of medical facilities.

Admissions per hospital bed - Total number of admissions to or discharges from hospitals divided by the number of beds.

HOUSING

Average size of household (persons per household) - total, urban, and rural - A household consists of a group of individuals who share living quarters and their main meals. A boarder or lodger may or may not be included in the household for statistical purposes. Statistical definitions of household vary.

Average number of persons per room - total, urban, and rural - Average number of persons per room in all, urban, and rural occupied conventional dwellings, respectively. Dwellings exclude non-permanent structures and unoccupied parts.

Access to electricity (percent of dwellings) - total, urban, and rural - Conventional dwellings with electricity in living quarters as percentage of total, urban, and rural dwellings respectively.

EDUCATION

Adjusted enrollment ratios

Primary school - total, and female - Total and female enrollment of all ages at the primary level as percentages of respectively primary school-age population; normally includes children aged 6-11 years but adjusted for different lengths of primary education; for countries with universal education enrollment may exceed 100 percent since some pupils are below or above the official school age.

Secondary school - total, and female - Computed as above; secondary education requires at least four years of approved primary instruction; provides general vocational, or teacher training instructions for pupils usually of 12 to 17 years of age; correspondence courses are generally excluded.

Vocational enrollment (percent of secondary) - Vocational institutions include technical, industrial, or other programs which operate independently or as departments of secondary institutions.

Pupil-teacher ratio - primary, and secondary - Total students enrolled in primary and secondary levels divided by numbers of teachers in the corresponding levels.

Adult literacy rate (percent) - Literate adults (able to read and write) as a percentage of total adult population aged 15 years and over.

CONSUMPTION

Passenger cars (per thousand population) - Passenger cars comprise motor cars seating less than eight persons; excludes ambulances, hearses and military vehicles.

Radio receivers (per thousand population) - All types of receivers for radio broadcasts to general public per thousand of population; excludes unlicensed receivers in countries and in years when registration of radio sets was in effect; data for recent years may not be comparable since most countries abolished licensing.

TV receivers (per thousand population) - TV receivers for broadcast to general public per thousand population; excludes unlicensed TV receivers in countries and in years when registration of TV sets was in effect.

Newspaper circulation (per thousand population) - Shows the average circulation of "daily general interest newspaper", defined as a periodical publication devoted primarily to recording general news. It is considered to be "daily" if it appears at least four times a week.

Cinema annual attendance per capita per year - Based on the number of tickets sold during the year, including admissions to drive-in cinemas and mobile units.

EMPLOYMENT

Total labor force (thousands) - Economically active persons, including armed forces and unemployed but excluding housewives, students, etc. Definitions in various countries are not comparable.

Female (percent) - Female labor force as percentage of total labor force.

Agriculture (percent) - Labor force in farming, forestry, hunting and fishing as percentage of total labor force.

Industry (percent) - Labor force in mining, construction, manufacturing and electricity, water and gas as percentage of total labor force.

Participation rate (percent) - total, male, and female - Total, male, and female labor force as percentages of their respective populations.

These are ILO's adjusted participation rates reflecting age-sex structure of the population, and long time trend.

Economic dependency ratio - Ratio of population under 15 and 65 and over to the labor force in age group of 15-64 years.

INCOME DISTRIBUTION

Percentage of private income (both in cash and kind) received by richest 5 percent, richest 20 percent, poorest 20 percent, and poorest 40 percent of households.

POVERTY TARGET GROUPS

Estimated absolute poverty income level (US\$ per capita) - **urban and rural** - Absolute poverty income level is that income level below which a minimum nutritionally adequate diet plus essential non-food requirements is not affordable.

Estimated relative poverty income level (US\$ per capita) - **urban and rural** - Relative poverty income level is that income level less than one-third per capita personal income of the country.

Estimated population below poverty income level (percent) - **urban and rural** - Percent of population (urban and rural) who are either "absolute poor" or "relative poor" whichever is greater.

ECONOMIC DEVELOPMENT DATA SHEET

	Actual				1978 /a	Projected			Growth rates (%)				1975 share of GDP (%)
	1965	1970	1976	1977		1979	1980	1985	1965-77	1977-79	1979-85	1985-90	
A. National Accounts (Million US\$ at 1975 prices)													
1. Gross domestic product	6,843.8	10,323.0	15,712.6	16,685.5	18,138.9	19,395.2	20,692.9	29,256.7	7.7	7.8	7.1	7.0	100.0
2. Gains from terms of trade	-44.3	42.8	-507.7	-978.1	-704.3	-572.9	-533.8	-518.2					-3.2
3. Gross domestic income	6,799.5	10,365.8	15,204.9	15,707.4	17,434.6	18,822.3	20,159.1	28,738.5	7.2	9.5	7.3	7.0	96.8
4. Imports	1,659.9	2,989.4	3,699.1	4,460.8	4,896.8	5,082.8	5,440.4	7,507.8	8.6	6.7	6.7	6.8	23.5
5. Exports - volume	-1,593.2	-2,274.8	-3,808.4	-4,506.9	-4,641.3	-4,481.1	-4,862.1	-7,448.5	9.1	-0.3	8.8	8.7	24.2
6. Exports - adjusted for TOT	-1,548.9	-2,317.5	-3,300.7	-3,528.8	-3,937.0	-3,908.1	-4,328.3	-6,930.3	7.1	5.2	10.0	8.8	21.0
7. Resource gap - adjusted for TOT	111.0	671.9	398.4	932.1	959.8	1,174.7	1,112.1	577.5					2.5
8. Total consumption	5,307.3	8,007.0	11,709.5	12,370.3	13,579.1	14,809.7	15,740.4	21,253.9	7.3	9.4	6.2	6.1	74.5
9. Investment	1,606.2	3,030.6	3,893.8	4,269.2	4,815.3	5,187.2	5,530.8	8,062.0	8.5	10.2	7.6	7.5	24.8
10. National savings	1,576.4	2,500.8	3,477.7	3,312.5	3,794.2	3,970.7	4,300.3	7,037.7	6.4	9.5	10.0	9.6	22.1
11. Domestic savings adjusted for TOT	1,497.2	2,358.7	3,495.5	3,337.1	3,855.5	4,012.6	4,418.7	7,484.6	6.9	9.7	10.9	9.3	22.2
12. GDP at current US\$	4,052.9	6,543.3	16,284.3	18,156.9	21,881.8	24,093.0	27,401.6	55,355.9	13.3	15.2	14.9	13.4	
B. Sector Output (Share of GDP)													
1. Agriculture	0.391	0.346	0.301	0.281	0.271	0.264	0.258	0.229					
2. Industry	0.208	0.227	0.269	0.288	0.299	0.304	0.309	0.335					
3. Services	0.401	0.427	0.430	0.431	0.430	0.432	0.432	0.437					
C. Prices (1975 = 100)													
1. Export price index	46.43	48.04	91.65	89.35	103.13	113.40	123.48	172.32	5.6	12.7	7.2	5.1	
2. Import price index	47.76	47.15	105.75	114.12	121.58	130.03	138.71	185.20	7.5	6.7	6.2	5.0	
3. Terms of trade index	97.22	101.88	86.67	78.30	84.83	87.21	89.02	93.04	-1.8	5.5	1.1	0.1	
4. GDP deflator (JSS)	59.22	63.39	103.64	108.82	116.07	124.22	132.42	189.21	5.2	6.8	7.3	6.0	
5. Annual average exchange rate	20.80	20.80	20.40	20.40									
D. Selected Indicators													
	1965-77	1977-79	1979-85	1985-90									
1. ICOR	3.56	3.32	3.80	3.97									
2. Import elasticity	1.09	0.87	0.95	0.97									
3. Average national savings rate	0.24	0.20	0.23	0.26									
4. Marginal national savings rate	0.18	0.25	0.32	0.35									
5. Imports/GDP	0.27	0.26	0.26	0.26									
6. Investment/GDP	0.27	0.26	0.27	0.28									
7. Resource gap/GDP	0.04	0.06	0.04	0.01									
E. Output, Labor Force and Productivity in 1975													
			Value added /b		Labor force /c		V.A. per worker /b /c						
			US\$ million	%	Million	%	US\$	% of average					
1. Agriculture			4,559	31.3	13.4	75.7	340	41.5					
2. Industry			4,442	30.4	1.4	7.9	3,170	356.7					
3. Services			5,588	38.3	2.9	16.4	1,930	235.4					
Total/average			14,589	100.0	17.7	100.0	820	100.0					
F. Public Finance (% of GDP) (Central Government)													
	1965	1970	1974	1975	1976	1977/a							
1. Current revenue	13.5	13.8	14.5	13.6	13.4	14.6							
2. Tax revenue	12.3	12.5	13.5	12.0	12.1	13.3							
3. Current expenditures	10.5	12.6	10.7	12.1	13.0	12.5							
4. Budgetary savings	2.9	1.2	3.7	1.5	3.4	1.1							
5. Total public investment	6.5	7.7	3.8	4.9	5.3	5.4							
G. Fuel Imports (Current US\$ millions) (% of total imports incl. NFS)													
	1965	1970	1974	1975	1976	1977/a							
	65.0	112.0	628.6	711.7	833.7	923.0							
	8.3	8.0	18.4	20.0	21.1	19.7							

/a Preliminary.

/b At current market prices.

/c Estimate.

BALANCE OF PAYMENTS, EXTERNAL ASSISTANCE, DEBT AND CREDITWORTHINESS
(Current US\$ millions)

	Actual					Projected				
	1973	1974	1975	1976	1977	1978 /a	1979	1980	1985	1990
Summary of Balance of Payments										
Exports (including NPS)	2,084.7	3,025.4	2,796.5	3,490.6	4,029.3	4,786.6	5,081.7	6,004.0	12,835.0	24,967.7
Imports (including NPS)	2,258.3	3,153.2	3,487.3	3,911.9	5,093.8	5,953.5	6,609.1	7,546.7	13,904.5	24,650.4
Resource balance	-173.6	-327.8	-690.8	-421.3	-1,064.4	-1,166.9	-1,527.4	-1,542.7	-1,069.5	317.3
Net factor service income	-20.8	-0.7	5.4	-41.6	-72.5	-143.2	-134.3	-243.4	-925.0	-1,412.5
Net interest payments	7.0	36.0	69.0	26.1	-4.0	-70.8	-81.7	-187.9	-766.9	-1,170.7
Of which on public M & LT loans	-25.1	-28.1	-34.5	-44.3	-64.5	-100.2	-133.1	-174.5	-487.1	-882.0
Direct investment income	-28.0	-37.0	-64.0	-66.1	-68.5	-72.4	-75.5	-80.0	-192.5	-290.0
Workers remittances (net)	0.0	0.0	0.0	0.0	0.0	0.0	22.9	24.5	34.4	48.2
Current transfers (net)	145.5	241.0	80.1	22.8	39.3	68.7	80.0	80.0	100.0	110.0
Balance on current account	-48.9	-87.5	-605.3	-440.1	-1,097.6	-1,241.4	-1,581.7	-1,706.1	-1,894.5	-985.1
Private direct investment	67.0	135.6	85.5	79.1	106.1	42.5	140.0	136.8	276.3	487.0
Grants & grant-like flows	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Public M & LT loans										
Disbursements	69.0	95.9	149.2	241.7	362.6	711.5	816.6	1,010.8	1,960.4	2,697.6
Amortization	-29.8	-32.3	-38.7	-43.4	-87.8	-104.2	-164.1	-222.1	-620.1	-1,092.7
Net disbursements	39.2	63.5	110.5	198.3	274.8	607.3	652.5	788.7	1,340.3	1,604.9
Other M & LT loans										
Disbursements	178.9	326.2	299.6	279.7	311.8	504.4	672.1	1,028.8	1,393.0	462.2
Amortization	-223.1	-197.2	-235.1	-245.9	-264.2	-473.3	-202.8	-266.5	-850.6	-1,167.8
Net disbursements	-44.2	129.3	64.5	33.8	47.6	31.1	469.3	762.3	542.4	-705.6
Use of IMF resources	0.0	0.0	0.0	77.1	1.8	137.7	100.0	-30.0	-30.0	0.0
Short-term capital transactions	42.0	55.5	127.5	136.2	256.2	75.0	120.0	128.4	180.1	252.6
Capital transactions NEI	57.9	96.3	77.2	-11.4	136.2	-96.7	0.0	0.0	0.0	0.0
Change in reserves (- = increase)	-113.0	-392.7	140.1	-73.0	275.0	444.5	100.0	-100.0	-414.8	-654.5
Net foreign exchange reserves /b (end of period)	1,306.0	1,599.0	1,406.0	1,444.0	1,135.8	680.0	945.0	1,045.0	2,634.5	5,320.9
Grant and Loan Commitments										
Official grants	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total public M & LT loans	87.1	436.5	223.4	372.3	633.0	1,031.0	1,031.0	1,031.0	1,031.0	1,031.0
IBRD	15.0	142.0	95.0	158.0	137.8	211.0	211.0	211.0	211.0	211.0
IDA	25.0	7.0	0.0	0.0	0.0	27.0	27.0	27.0	27.0	27.0
Other multilateral	6.4	77.2	62.7	92.1	47.0	119.0	119.0	119.0	119.0	119.0
Governments	24.0	200.5	47.7	22.2	106.4	264.0	264.0	264.0	264.0	264.0
Of which centrally planned economies /c	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Suppliers	0.0	0.0	0.0	0.0	0.0	85.0	85.0	85.0	85.0	85.0
Financial institutions	16.7	9.7	18.0	100.0	341.9	325.0	325.0	325.0	325.0	325.0
Other M & LT loans (where available)	178.9	415.9	392.5	360.2	348.9	531.8	531.8	531.8	531.8	531.8
Memorandum Items										
Grant element of total commitments (%)	44.600	31.400	16.700	11.500	10.200	14.869	14.869	14.869	14.869	14.869
Average interest (%)	0.044	0.057	0.076	0.081	0.080	0.072	0.072	0.072	0.072	0.072
Average maturity (years)	29.100	23.600	23.500	18.500	14.000	12.832	12.832	12.832	12.832	12.832
Medium- and Long-Term Debt (Disbursed only)										
Total debt outstanding (DOD end of period)	903.5	1,166.7	1,345.6	1,606.8	1,931.9	2,217.4	2,217.4	2,217.4	2,217.4	2,217.4
Including undisbursed	1,182.4	1,770.0	2,009.5	2,404.0	3,145.9	4,054.7	4,054.7	4,054.7	4,054.7	4,054.7
Public debt service	-54.5	-60.4	-73.2	-87.7	-152.3	-204.4	-204.4	-204.4	-204.4	-204.4
Interest	-25.1	-28.1	-34.5	-44.3	-64.5	-100.2	-100.2	-100.2	-100.2	-100.2
Other M & LT debt service	-255.8	-266.8	-314.5	-245.9	-338.3	-547.8	-547.8	-547.8	-547.8	-547.8
Total debt service	-310.7	-327.2	-387.7	-333.6	-490.6	-752.2	-752.2	-752.2	-752.2	-752.2
Debt Burden (%)										
Debt service ratio	14.9	10.8	13.9	9.6	12.2	15.7	15.7	15.7	15.7	15.7
Debt service ratio /d	16.2	12.0	16.2	11.5	13.9	17.2	17.2	17.2	17.2	17.2
Debt service/GDP	2.9	2.5	2.7	2.0	2.7	3.4	3.4	3.4	3.4	3.4
Public debt service/Government revenue	4.3	2.5	3.5	3.7	4.4	5.5	5.5	5.5	5.5	5.5
Terms (%)										
Interest on total DOD/total DOD	5.7	5.5	5.6	5.4	5.7	5.2	5.2	5.2	5.2	5.2
Total debt service/total DOD	12.4	11.8	11.9	10.7	12.0	27.7	27.7	27.7	27.7	27.7
Dependency Ratios for M & LT Debt (%)										
Gross disbursements/imports (including NPS)	11.0	12.6	12.9	13.3	10.9	21.0	21.0	21.0	21.0	21.0
Net transfer/imports (including NPS)	-2.8	2.8	1.8	4.8	2.0	10.2	10.2	10.2	10.2	10.2
Net transfer/gross disbursements	-25.3	22.5	13.6	36.0	18.4	48.7	48.7	48.7	48.7	48.7
Exposure (%)										
IBRD disbursements/gross total disbursements	14.8	8.0	9.1	8.3	12.0	9.3	9.3	9.3	9.3	9.3
Bank Group disbursements/gross total disbursements	14.8	8.3	9.7	9.5	13.6	9.9	9.9	9.9	9.9	9.9
IBRD DOD/total DOD	24.2	20.8	20.0	18.6	17.9	20.2	20.2	20.2	20.2	20.2
Bank Group DOD/total DOD	24.2	20.9	20.4	19.2	18.9	21.3	21.3	21.3	21.3	21.3
IBRD debt service/total debt service	8.0	8.5	8.3	10.9	9.8	7.8	7.8	7.8	7.8	7.8
Bank Group debt service/total debt service	8.0	8.5	8.3	10.9	9.8	7.8	7.8	7.8	7.8	7.8
External Debt (Disbursed only)										
(Current US\$ millions)										
		Outstanding 12/31/77								
		Amount	%							
IBRD		345.7	32.9							
Bank Group		365.2	34.7							
Other multilateral		137.5	13.1							
Governments		379.7	36.1							
Of which centrally planned economies /c		0.0	0.0							
Suppliers		13.2	1.3							
Financial institutions		156.6	14.9							
Bonds		0.0	0.0							
Public debt net		0.0	0.0							
Total public M & LT debt		1,052.1	100.0							
Other M & LT debt		879.8	83.6							
Total public debt (including undisbursed)		2,266.1	215.4							
Total M & LT debt (including undisbursed)		3,145.9	299.0							

/a Preliminary.
/b Net foreign assets: US\$ equivalent of Line 31.
/c Includes CMEA countries, Peoples Republic of China, North Korea, North Viet Nam.
/d Including net direct investment income.

THE STATUS OF BANK GROUP OPERATIONS IN THAILAND

A. STATEMENT OF BANK LOANS AND IDA CREDITS

(As of June 30, 1979)

Loan or Credit Number	Year	Borrower	Purpose	Amounts (\$ million)		
				Less Cancellations		
			Bank	IDA	Undisbursed	
Twenty-four loans and one credit fully disbursed				388.9	5.5	-
822	1972	Kingdom of Thailand	Education	15.4	-	5.1
864	1972	Telephone Organization of Thailand	Telecom	37.0	-	2.2
870	1972	Kingdom of Thailand	Highways	28.6	-	0.8
369	1973	Kingdom of Thailand	Education	-	19.5	4.2
461	1974	Kingdom of Thailand	Irrigation	-	7.0	1.1
977	1974	Electricity Generating Authority of Thailand	Power	75.0	-	14.9
992	1974	Industrial Finance Corporation of Thailand	Industry	11.7	-	0.2
1021	1974	Metropolitan Water Works Authority	Water	55.0	-	8.8
1149	1975	Kingdom of Thailand	Irrigation	95.0	-	72.2
1198	1976	Kingdom of Thailand	Rural Dev.	21.0(TW)	-	10.7
1199	1976	Kingdom of Thailand	Livestock	5.0(TW)	-	3.2
1243	1976	Kingdom of Thailand	Rubber	50.0	-	40.4
1253	1976	Telephone Organization of Thailand	Telecom	26.0	-	7.1
1271	1976	Kingdom of Thailand	Education	31.0	-	23.2
1327	1976	Industrial Finance Corporation of Thailand	Industry	25.0	-	16.9
1393	1977	Kingdom of Thailand	Agriculture	28.0	-	23.3
1468	1977	Kingdom of Thailand	Irrigation	55.0	-	45.2
1485	1977	Electricity Generating Authority of Thailand	Power	50.0	-	37.8
1492	1977	Industrial Estates Authority of Thailand	Industry	4.8	-	4.2
767	1978	Kingdom of Thailand	Population	-	33.1/a	33.0
1519	1978	Kingdom of Thailand	Transportation	110.0	-	93.8
1527	1978	Provincial Electricity Authority	Rural Elect.	25.0	-	25.0
1556	1978	Kingdom of Thailand	Housing	8.6	-	8.1
S-10	1978	Natural Gas Organization of Thailand	Natural Gas	4.9	-	1.6
1620	1978	Telephone Organization of Thailand	Telecom	90.0	-	90.0
1630	1978	Kingdom of Thailand	Irrigation	17.5	-	17.4
1638	1979	Kingdom of Thailand	Urban	16.0	-	16.0

/a Of which \$3.1 is Norway grant participation.

1662	1979	State Railway of Thailand	Railways /b	16.7	-	16.7
1690	1979	Electricity Generating Authority of Thailand	Power /b	80.0	-	80.0
Cr.913	1979	Kingdom of Thailand	Education /b	-	35.0	35.00
" 929	1979	Kingdom of Thailand	Rural Dev./b	-	25.0	25.00
Total				<u>1,371.1</u>	<u>125.1/c</u>	<u>757.32</u>
of which has been repaid				<u>198.3</u>		
Total now outstanding				<u>1,172.8</u>	<u>125.1</u>	
Amount sold /c				68.6		
of which has been repaid				<u>39.5</u>	<u>29.1</u>	
Total now held by Bank and IDA				<u>1,143.7</u>	<u>125.1</u>	
Total undisbursed				<u>664.8</u>	<u>38.3</u>	

/a Of which \$3.1 million is Norway grant participation.

/b Approved but not yet effective.

/c Of which \$43.3 million sold to the Bank of Thailand.

/d Approved but not signed. According to Operations Manual instructions only signed loans and credits are to be included in Annex II. In this case, Loan 1690 should not be included.

B. STATEMENT OF IFC INVESTMENTS
(As of June 30, 1979)

<u>Year</u>	<u>Company</u>	<u>Type of Business</u>	<u>Amounts (\$ million)</u>		
			<u>Loan</u>	<u>Equity</u>	<u>Total</u>
1959	Concrete Products and Aggregate Co. Ltd.	Cement and Construction Materials	0.30	-	0.30
1964/	Industrial	Development	-	0.38	0.38
1970	Finance Corporation of Thailand (IFCT)	Finance Company			
1969/	Siam Cement Group	Cement and Construction Materials	28.33	3.75	32.08
1975					
1977	Mutual Fund Company Limited	Money and Capital Market	-	0.30	0.30
1977	United Sugar Terminal Limited	Food and Food Processing	2.50	0.20	2.70
1978	Siam Commercial Bank	Small and Medium Scale Industries	2.00	-	2.00
1978	Siam Cement Group	Cement and Construction Materials	-	0.09	0.09
1979	Bangkok Glass Industry Company, Limited	Glass Containers	4.85	0.25	5.10
1979	Siam City Cement Company, Limited	Cement and Construction Materials	36.00	4.00	40.00
1979	Thai Orient Leasing Co. Ltd.	Capital Market	-	0.15	0.15
	Total gross commitments		<u>73.98</u>	<u>9.12</u>	<u>83.10</u>
	Less cancellations, terminations, repayments and sales		<u>48.65</u>	<u>2.56</u>	<u>51.21</u>
	Net held by the Corporation		<u>25.33</u>	<u>6.56</u>	<u>31.89</u>
	Total undisbursed		<u>42.85</u>	<u>0.25</u>	<u>43.10</u>

C. STATUS OF PROJECTS IN EXECUTION /1
(As of June 30, 1979)

Loan No. 822 Second Education Project (Kasetsart University); \$15.4 Million
Loan of May 24, 1972; Effective Date: August 22, 1972;
Original Closing Date: June 30, 1978; Current Closing Date:
July 31, 1980

Although the technical assistance and educational aspects of the project are largely on schedule, civil works are about three years behind schedule with consequent delays in furniture and equipment procurement. The delays in civil works result from delays in contracting architectural consultants, completing tender documents, and awarding contracts. The specialist services program under the project is nearly completed. Out of 26 experts, 21 have completed their assignment, two are in post and three are being recruited. Recommendations of experts for improvement of teaching, research and extension activities are considered worthwhile and have been implemented by the university staff. All the fellowships have been awarded; 94 recipients have completed their training. Total project cost will exceed appraisal estimates by about 35%.

Credit No. 369 Third Education Project; \$19.5 Million Credit of April 11,
1973; Effective Date: August 8, 1973; Original Closing Date:
June 30, 1978; Current Closing Date: September 30, 1980

All project components are virtually completed except the Teacher Training Colleges (TTC) component which is about 36 months behind schedule; completion rates for civil works, furniture, equipment and technical assistance are 85%, 55%, 46% and 100% respectively. Good progress is generally being made in the pedagogical development of project components except at Songkla University where the attraction of teaching at Bangkok universities is resulting in high staff turnover.

/1 These notes are designed to inform the Executive Directors regarding the progress of projects in execution, and in particular to report any problems which are being encountered, and the action being taken to remedy them. They should be read in this sense, and with the understanding that they do not purport to present a balanced evaluation of strengths and weaknesses in project execution.

Loan No. 1271 Fourth Education Project; \$31 Million Loan of September 13, 1976; Effective Date: February 9, 1977; Closing Date: June 30, 1982

Progress in project implementation follows approximately the appraisal estimate. Ninety-four percent of first phase civil works have been completed. Civil works for the two remaining phases have been completed. Civil works for the two remaining phases have been contracted (secondary school component) or are being tendered (adult education component). Procurement of furniture and equipment follows the progress of civil works. One hundred thirty-seven out of 146 fellowships have been awarded, of which 119 have been completed. Staff training programs are on schedule but need to be improved, as does supervision by the Ministry of Education of its nonformal education programs.

Loan No. 864 First Telecommunications Project; \$37 Million Loan of December 5, 1972; Effective Date: March 1, 1973; Original Closing Date: December 31, 1977; Current Closing Date: December 31, 1979

The project is generally maintaining the revised time schedule established in 1975, following initial delays. The Bank loan is fully committed and \$34.8 million (94%) had been disbursed as of June 30, 1979. Nearly all of the local telephone network expansion has been completed. After a year's delay in procurement under a bilateral loan, the installation of the long distance transmission equipment is now progressing satisfactorily. The project is expected to be completed by the end of November 1979, about three years behind schedule.

Loan No. 1253 Second Telecommunications Project; \$26 Million Loan of June 11, 1976; Effective Date: August 25, 1976; Closing Date: December 31, 1980

The project is progressing satisfactorily. Procurement action on all Bank-financed items is complete. The Bank loan is fully committed and \$18.9 million (73%) had been disbursed as of June 30, 1979. Local telephone network expansion is nearing completion. After a year's delay in procurement under a bilateral loan, the installation of long distance transmission equipment is progressing satisfactorily. The project is now expected to be completed by the end of November 1980, 11 months behind schedule.

Loan No. 1620 Third Telecommunications Project; \$90 Million Loan of
October 4, 1978; Effective Date: January 3, 1979;
Closing Date: September 30, 1983

Due to delay in decision on the type of switching equipment to be installed in Thailand from now on, action on procurement has been delayed by about nine months. Bid documents for all project items are now expected to be issued by end of 1979. Waiting lists have been introduced in all telephone areas and procedures for giving new connections revised. Progress on implementation of other loan covenants is satisfactory.

Loan No. 870 Fifth Highway Project; \$28.6 Million Loan of December 26, 1972;
Effective Date: March 26, 1973; Original Closing Date:
December 31, 1977; Current Closing Date: December 31, 1979

The project is almost complete and 97% of the loan was disbursed as of June 30, 1979.

Loan No. 1519 Sixth Highway (Provincial Roads) Project: \$110 Million
Loan of March 23, 1978; Effective Date: June 22, 1978;
Closing Date: December 31, 1982

Progress is satisfactory. Procurement of maintenance equipment is under way, and most contracts have been awarded. Construction of project roads is well under way, with most contracts are on schedule.

Credit No. 461 Northeast Irrigation Improvement Project; \$7 Million Credit
of February 19, 1974; Effective Date: October 7, 1974;
Original Closing Date: June 30, 1979; Current Closing Date:
June 30, 1980

The project will be completed two years behind schedule as a result of initial delays in appointing consultants and in procuring earthmoving equipment. During the 1977/78 working season there was a marked improvement in the pace of construction, especially on the tertiary canals. Work on rehabilitation of main canal systems has been satisfactory and will be completed in 1979. The estimated project cost is \$30.3 million, compared with \$12.5 million at appraisal. In part, the increased cost is due to price inflation being higher than foreseen at appraisal. Also, a large part of the increase is due to a decision to provide new tertiary canals over an area of 34,700 ha rather than the 21,500 ha assumed at appraisal, and the adoption of higher standards for tertiary development than envisioned at appraisal. The higher costs are

compensated for by increases in projected commodity prices and the economic rate of return is now estimated at 24% compared to 22% at appraisal. Progress on the rainfed rice component continues to be satisfactory. The breeding program continues to be the strongest element while the agronomic program remains weak.

Loan No. 1630 Second Northeast Thailand Irrigation Improvement Project:
\$17.5 Million of December 4, 1978; Effective Date: April 25, 1979;
Closing Date: September 30, 1985

Consultant contract was signed in March 1979, and six engineers are now on duty. Design by contract is delayed but "force account" work is expected to begin in January 1980.

Loan No. 1149 Phitsanulok Irrigation Project; \$95 Million Loan of
July 25, 1975; Effective Date: October 31, 1975;
Closing Date: June 30, 1983

Major civil works are about one third behind schedule set at appraisal, but it is still expected that the project will be completed by mid-1984. Construction work on the diversion dam and the first of three canal contracts is progressing satisfactorily. Work on a second canal contract started in April 1979. RID expects to award the third canal contract in time to commence construction during the next dry season. About 5,000 ha of on-farm development will be completed this year. Thus, by the end of the 1979 construction season the total area provided with on-farm development will amount to 10,500 ha, or 11% of the project area. All studies financed under the project are proceeding satisfactorily.

Loan No. 1468 Second Chao Phya Irrigation Improvement Project;
\$55 Million Loan of September 23, 1977; Effective Date:
December 23, 1977; Closing Date: June 30, 1983

Equipment procurement is progressing satisfactorily. Rehabilitation and on-farm development works on about 5,300 ha were completed in the 1978 construction season. Project preparation for about 40,000 ha in the Stage II area of MaeKlong was recently completed. A project monitoring system is being set up and the Chao Phya Project area is now served by the National Agricultural Extension Project.

Loan No. 1198T Northeast Thailand Rural Development Project; \$21 Million
Loan of February 27, 1976; Effective Date: June 29, 1976;
Closing Date: June 30, 1981

After a delay of one year in appointing consultants good progress is being made on the engineering of the village roads. The first contract for construction of 114 km has been completed and work has begun on two contracts for a total of some 250 km. Procurement problems have delayed the water supply components, but most of the drilling equipment has now been delivered, drilling crews have been recruited and are being trained. Progress on rural electrification is excellent and this component will be completed in June 1979. Progress on agricultural extension and land settlements is satisfactory. After a slow start-up, the Upland Crop Improvement Component is progressing satisfactorily. The program management, with the assistance of a recently appointed program advisor, has undertaken a critical review of past work and is gradually introducing an innovative program of research investigations of great problem-solving relevance to upland crop farmers in the Northeast.

Loan No. 1199T Livestock Development Project; \$5.0 Million Loan of February 27,
1976; Effective Date: May 25, 1976; Closing Date: June 30,
1981

The seed production and pasture development programs are progressing reasonably well and the loaned-bull and artificial insemination programs, hitherto hindered by the delay in importation of cattle, are expected to improve with the delivery of 400 imported Brahman cattle. Furthermore, the number of permanent project staff has been increased from the initially approved 121 to 223, and the New Zealand Government has agreed in principle to provide additional technical assistance for the remaining project period. Disbursements are still considerably behind schedule but are expected to increase with improvement in the preparation of procurement documents and the importation of cattle. The Department of Livestock Development has agreed to conduct a livestock sector review to prepare an integrated development plan.

Loan No. 1243 Rubber Replanting Project; \$50 Million Loan of September 13,
1976; Effective Date: January 14, 1977; Closing Date:
June 30, 1981

The project is one year behind schedule due to procurement difficulties and initial delay in loan signing. Implementation is satisfactory now. Replanting attained in 1978 was close to the revised target of 35,000 ha.

Loan No. 1393 National Agricultural Extension Project; \$28 Million Loan of May 17, 1977; Effective Date: September 1, 1977; Closing Date: December 31, 1982

Project implementation in the field is progressing well with almost all staff appointments completed in fifteen provinces. There continues to be encouraging evidence of adoption of new technology by farmers as a result of improved extension services. Procurement is on schedule, but the civil works program is now more than one year late because bids for the revised civil works program were excessively high or unresponsive. Retendering is in progress, using simplified tender procedures agreed to for one Regional Training Center and eight provincial construction packages. Tendering has commenced for the 1979 construction program. Disbursements are also behind schedule because of the delays in the civil works program, but both the civil works program and disbursements are expected to progress as scheduled during 1979. Extension and civil works consultants continue to provide DAE with excellent assistance.

Loan No. 977 Srinagarind (Ban Chao Nen) Hydroelectric Project; \$75 Million Loan of April 15, 1974; Effective Date: June 14, 1974; Closing Date: December 31, 1980

Civil works under the project have been about 85% completed. Construction of the dam embankment was completed on May 14, 1978 and all other works are being carried out satisfactorily. The installation of the turbine generating units is expected to be completed on schedule. Although the reservoir did not reach the level anticipated during the first wet season, 1978 has been a good hydro year and the water situation in the reservoir has improved. Project costs are likely to be about 20% over estimates, due mainly to additional grouting work required beneath the main embankment. Project costs will probably increase further as a result of the recent devaluation of the US dollar against the Japanese yen. The progress on resettlement has been satisfactory, and almost all of the 814 families affected have now been moved into their new homes.

Loan No. 1485 Pattani Hydroelectric Project; \$50 Million Loan of September 23, 1977; Effective Date: December 20, 1977; Closing Date: December 31, 1982

The construction of the main civil works is proceeding satisfactorily. Implementation is about one month behind schedule. The initial delay was caused by slow mobilization of the contractor and poorer than expected rock conditions at the downstream ends of the diversion tunnels. Orders for all major equipment (financed by the Kuwait Fund) have been placed. Construction of the resettlement project is progressing according to schedule. Disbursements are generally in line with appraisal estimates.

Loan No. 1527 The Accelerated Rural Electrification Project; \$25 Million Loan of March 9, 1978; Effective Date: June 7, 1978; Closing Date: June 30, 1983.

The project is in the early stages of implementation. There was an initial delay of about four months in the preparation of bid documents but procurement is now under way and should present no further problems. Field construction crews have been organized and have been working on pole setting and conductor stringing since the middle of 1978, utilizing materials available in stock.

Loan S-10 Natural Gas Development Engineering Project, \$4.9 Million Loan of July 28, 1978; Effective Date: September 25, 1978; Closing Date: June 30, 1980

The engineering work is proceeding on schedule. The follow-up project loan is at the appraisal stage.

Loan No. 1021 Bangkok Water Supply Project; \$55 Million Loan of June 28, 1974; Effective Date: December 2, 1974; Original Closing Date: June 30, 1979; Current Closing Date: June 30, 1980

Physical work on the project is proceeding satisfactorily. The quality of construction and the performance of consultants on supervision of construction of the IBRD portion of the project is good. The quality of work on the ADB portion of the project - the transmission and distribution of pipes - has been improved. Because of the initial delays in contract awards, the project is expected to be completed in late 1979, about 20 months behind the original schedule. Due to inadequate tariffs, which were last revised in May 1972, MWWA's financial performance continues to be poor. MWWA's proposals for raising the water tariffs in line with increased operating costs are to be considered by the Cabinet shortly.

Loan No. 1556 Bangkok Sites and Services Project; \$8.6 Million Loan of June 15, 1978; Effective Date: September 22, 1978; Closing Date: December 31, 1981

Progress is generally good with only minor delays in implementation. Current cost estimates for civil works are below appraisal estimates. Initial interagency problems in improving water supply and in transfer of project land at King Petch are being resolved. In order to minimize resistance to beneficiary charges, cost recovery in improved slums will be introduced as physical works are completed - starting in early 1980.

Loan No. 1638 Bangkok Traffic Management Project; \$16 Million Loan of January 25, 1979; Effective Date: April 25, 1979; Closing Date: September 30, 1982

Implementation of the project is generally ahead of schedule. Signal equipment will be installed this spring, some two years earlier than had been expected, as a result of the consulting and procurement work done under contracts for which the Bank provided retroactive financing.

Loan No. 1492 The Minburi (Lat Krabang) Industrial Estate Project; \$4.75 Million Loan of December 5, 1977; Effective Date: March 24, 1978; Closing Date: December 31, 1981

Project implementation continues to be good. On-site infrastructure has progressed further. Bunding, drainage, and three of four deep wells have been completed. Substantial progress is being achieved in road construction, sewerage, and water distribution and work is expected to be completed by end of 1979. Land sales have been very encouraging with 90% of available plots either firmly committed or with commitment under negotiations, and are well ahead of appraisal estimates. These sales have been achieved at an average sales price of B 300,000 per rai, as compared to projected sales price of B 250,000 per rai, in the appraisal. In order to accommodate substantial demand for the Export Processing Zone, IEAT has enlarged this area to 30 ha. The estate's full development is still scheduled for mid-1980.

Loan No. 992 Second Industrial Finance Corporation of Thailand (IFCT) Project; \$12.0 Million Loan of June 4, 1974; Effective Date: September 4, 1974; Original Closing Date: September 30, 1978; Current Closing Date: September 30, 1979

The full amount of the \$12 million Loan has been committed, of which 98% has been disbursed. The commitment was more rapid than originally estimated. Disbursements have also been very satisfactory. Since June 1974 when the loan was made, IFCT's financial condition has continued to be good.

Loan No. 1327 Third IFCT Project; \$25 Million Loan of December 8, 1976; Effective Date: March 14, 1977; Closing Date: December 31, 1980

The loan commitment rate has been slower than expected because of the sharply depressed investment climate in 1976. The IFCT's capital structure and liquidity position have improved, however, with successful share capital increases. Satisfactory progress has been made on the institution-building aspects of project.

Credit No. 767 Population Project; \$33.1 Million Credit of February 27, 1978; Effective Date: July 6, 1978; Closing Date: December 31, 1981

RTG has, in accordance with the Credit Agreement: (a) established and staffed the Project Coordinating Committee, which has met frequently; (b) established and staffed the Project Administration and Financing Unit (PAFU); (c) appointed a project director, deputy director and two assistant project directors and a health planner/economist; and (d) initiated most of the key project activities at the national level and in the 20 Accelerated

Family Planning and Health Provinces. Due to initial delays in staffing the project administration and financing unit, a high turnover of staff in the Construction and Design Division, and delays in securing Budget Bureau approval for the supplementary budget for FY1978, key project activities were held up initially and major elements of the project are about six months behind schedule. The Ministry of Public Health is, however, taking appropriate action to strengthen project management, improve coordination and remove impediments to implementation.

THAILAND

SECOND NATIONAL AGRICULTURAL EXTENSION PROJECT

Supplementary Project Data Sheet

Section I: Timetable of Key Events

- (a) Time taken by country to prepare the project: nine months
- (b) Agency which prepared the project: Department of Agricultural Extension in the Ministry of Agriculture and Cooperatives
- (c) First presentation to the Bank: December 1977
First mission to consider the project: April 1978
- (d) Date of departure of appraisal mission: August 21, 1978
Date of departure of postappraisal mission: January 18, 1979
- (e) Completion of negotiations: June 29, 1979
- (f) Planned date of effectiveness: November 1979

Section II: Special Bank Implementation Actions

None.

Section III: Special Conditions

The Borrower has agreed that:

- (a) the position of Deputy Director General for Extension Operations and Training would be established and filled by December 31, 1979 (para. 39);
- (b) the Training Section in DAE will be officially established as a Training Division by March 31, 1980 (para. 39);
- (c) DAE will, not later than March 31, 1980 establish procedures satisfactory to the Bank to ensure the coordination and uniform implementation of a training and visit system of agriculture extension on a nationwide basis (para. 39);
- (d) Provincial Agricultural Coordinating Committees and technical advisory panels will be established in project provinces (para. 42);
- (e) new staff will be made available as required for timely implementation of extension services in the proposed project provinces (para. 44);
- (f) project monitoring and evaluation will be carried out through procedures agreed with the Bank (para. 46); and
- (g) sufficient funds will be provided after project completion to ensure the extension program continues to be adequately staffed and operated (para. 54.).

