LAND DEVELOPMENT IN THAILAND

Plan B

Thesis for the Degree of M. S.

MICHIGAN STATE UNIVERSITY

Suwan Traipol

1965

LAND DEVELOPMENT IN THAILAND

by

Suwan Traipol

A Research Paper

Submitted to

Michigan State University

in partial fulfillment of the requirements

(under Plan B)

for the degree of

MASTER OF SCIENCE

Department of Agricultural Economics

1965

ACKNOWLEDGMENT

The author wishes to express his gratitude to those who have contributed in making the present paper possible. Among these are Dr. John R. Brake, Dr. Robert D. Stevens, Dr. Milton H. Steinmueller, and Dr. A. Allen Schmid, who have most influenced his thinking. His debts are greater than he can acknowledge.

The author also wishes to acknowledge the assistance of William E. Kost, graduate student in the Department of Agricultural Economics, Michigan State University, for helping with the final details.

Suwan Traipol

TABLE OF CONTENTS

	Page
CHAPTER 1. INTRODUCTION	1
Importance and Purposes of the Study	1
General Information on Thailand	3
a. Geography	3
b. Economy	4
(1) Agriculture	4
(2) Industry	7
CHAPTER 2. PRESENT LAND USE AND INSTITUTIONS	9
Land Use	9
Institutions	15
A. Acquisition of Land Titles	15
B. Land Tenure	16
C. Tenancy	18
CHAPTER 3. NATIONAL LAND POLICIES	21
Land Policies Prior to 1961	21
Land Code of 1954	25
Taxation of Landed Property	32
New Land Development Policies	35
National Forest Policy	40
Land Classification	41
CHAPTER 4. LAND DEVELOPMENT PROGRAMS	45
Land Distribution Project of the Department of Land . . .	45
Land Settlement Projects of the Department of Public Welfare	47
Land Projects of the Department of Land Cooperatives . . .	50
A. Cooperative Settlement Societies	51
B. Land Hire-Purchase Societies	54
C. Land Tenant Societies	54
D. Cooperative Land Improvement Societies	58
Projects of the Department of Forestry	60
A. Forest Reservation Project	60
B. Research in Watershed Management	62

Page

Projects of the Department of Irrigation 63
A. State Irrigation Projects 63
a. Chao Phya Yai Project 64
b. Yanhee Multipurpose Dam 68
B. People Projects 69
C. Tank Irrigation Projects 70
D. Pumping Irrigation Projects in Emergency Aid . . . 70

CONCLUSION 73

BIBLIOGRAPHY 83

CHAPTER 1

INTRODUCTION

IMPORTANCE AND PURPOSES OF THE STUDY

Clearly the role of land in economic growth is no longer as important as it appeared to Ricardo and his contemporaries. Yet, it is not easy to free ourselves from old ideas. Even though the land can be substituted by new factors and non-conventional inputs such as fertilizer, better seeds, better management, and/or technological advances, a certain minimum land-capital ratio per worker unit is still required. While most of the economists in such developed countries as the United States of America have turned their attention to new factors and non-conventional inputs, the ideas of improvement in an underdeveloped country like Thailand are still clumsy with the development of land as a basis for economic growth.

Since the Thai economy is basically agricultural with some 80 percent of the population deriving its income from this source, land is an important factor in agricultural production and in the Thai economy. Possibly 70 percent of

the total population cultivates rice. Rice, the traditional crop, accounts for two-thirds of all cultivated land. But the yield of 218 kilograms per rai (1958-1960 average) of rice production in Thailand is relatively low compared to that of 596 kilograms per rai in the United States of America, 759 kilograms per rai in Japan, and 907 kilograms per rai in Spain.

For centuries, Thailand's population has grown slowly, but with the recent reduction of the death rate, the rate of increase has risen from less than one percent to an estimated 2-3 percent per year. In 1961, Thailand's population numbered about 27 million, 75 percent of which are of Thai stock. The rest constitutes the minority groups--Chinese, Indonesian, Cambodian, Laotian and Vietnamese. The Chinese, numbering 3.5 million are the dominant minority group. Although the Chinese represent only 13 percent of the total population, they play an important role as middlemen in the economic life of the country.

In 1950, the density of population was about 36 persons per square kilometer. This number was increased about 47 percent by 1961. With the slow progress of the industrial sector and a limited amount of arable land, what land policies should have been, or might be, initiated to bring about a better standard of living for the Thais? Undoubtedly these implications call for land development. Land development, therefore, should have been carefully planned and closely investigated.

My purpose is simply to investigate the various land development programs that are being undertaken by many government departments in Thailand. I propose to examine four related questions; what are the national land development policies? What are these land development programs doing in achieving the national land development policies? Are land development possibilities of the country fulfilled by these programs? If not, what are the possible ways for achieving national land development policies?

General Information on Thailand

a. Geography

Thailand lies between the parallels 5° and 21° North, and between the meridians of 97° and 106° East Longitude, occupying a central position of the South-east Asian peninsula. She is bordered by Burma to the west and north, Loas and Cambodia to the east, and mainland Malaysia and the Gulf of Siam to the south. With an area of 321,250,000 rai* or about 200,000 square miles, Thailand is about the same size as France or about three-fourths the size of Texas.

The surface of the country is characterized by flat plains, which become inundated during each rainy season and which are intersected by winding rivers and streams; and by mountains covered with forest.

---

*2.5 rai = 1 acre

The climate of Thailand can be broken down into three major seasons; the hot season from March through May with temperatures averaging around 86°F, the rainy season from June through October with high humidity and temperatures averaging around 83°F, and the cool season from November through February with temperatures averaging around 80°F.

The annual precipitation is moderately high all over the country. The average precipitation of the whole kingdom between 1947 and 1961 was 1719 mm. The maximum precipitation is usually found in September. In this month the frequency of tropical depressions entering upper Thailand from South China Sea is highest and is the main cause of floods over upper Thailand.

b. Economy

(1) Agriculture

The Thai economy is basically agricultural with some 80 percent of the population deriving its income from this source. Historically, agriculture has been a one-crop rice economy -- a monoculture in the true sense of the word. Farms are mostly small, family-size operations; over 80 percent of the farmers own their own land.

Historically, Thailand had a closed economy characterized by subsistence cultivation. In 1855 a trade agreement with Great Britain initiated the rice export trade. From 1855 to 1950 rice usually accounted for 60 to 70 percent of all exports. In recent years rice exports have usually accounted for 25 to 30 percent of the annual rice production.[1/]

The prosperity of Thailand's economy has depended largely upon the production and export of Agricultural products. Like all other primary producing countries, the economy of Thailand has therefore been vulnerable to the fluctuations of prices in international markets. The world rice price has strongly influenced the level of well-being of the Thai people. Although nearly all rice production is in the hands of the Thais, the milling and trading operations are largely handled by the Chinese.

1/ U. S. Department of Agriculture Agricultural Diversification and Economic Development in Thailand, Foreign Agricultural Economic Report No. 8, Economic Research Service, Regional Analysis Division, Washington, D. C., March 1963, page 2.

The agriculture of Thailand may be treated under three major subjects: rice cultivation, upland crops and trees, and livestock production. In general, Thai agriculture is rather extensive. Multiple cropping is not frequently practiced. Most farmers still use their own primitive methods. The peasant relies on the seasonal rains to flood the fields and thus provide water to nourish the grain. Modern irrigation, in the sense of control over the amount of water supplied to the fields, existed in some areas. Water buffalos, which work well in flooded fields, are the principal draft animals used for cultivation all over the country. Bullocks are used in some dry-land areas. Modern tools, machinery and new techniques are being used only by a few farm families.

Capital inputs in form of fertilizer and machinery are rather limited. The average annual application of fertilizer is less than one pound per acre, lower than in any other Far Eastern country except Burma and Pakistan.[2/]

2/ Ibid., page 2

In most parts of the country rice is the principal crop with the exception of the southern peninsula region where rubber replaces rice in importance. In addition to rice, Thailand produces exportable surpluses of corn, cassava, sugarcane, mung beans, peanuts, castor seeds, jute and kenaf, and kapok. The principal crops cultivated for domestic consumption are cotton and tobacco, none of which are grown in sufficient quantities.

During the past several years, Thailand has been able to steadily increase its exports, but there is no indication that any new techniques or improvements have been used in the production process. The augmentation of total production has largely resulted from an expansion of cultivated areas.

(2) Industry

The industrial sector in Thailand is comparatively small, the principal products being cement, bricks, cotton yarn, cigarettes, paper, bottles, distillery, sugar, gunny bags, crude wrought iron works, and various tourist items such as Thai silk, silver wares, and jewelry.

Since the 6-year development plan (1961-1966) has been adopted, the industrial sector has progressed. The most significant development in the industrial sector so far has been the enactment of the Industrial Promotion Act of 1962. Under this Act, broader trade privileges and immunities to private foreign firms have been laid down as follows:

1. Income tax exemption for a reasonable period, 5 years.
2. Duty exemption on production machinery and equipment
3. Duty exemption or adjustment on principal raw materials.
4. An increase in duty on competing products where needed for a limited period.

Following this Act, notable industries are Motor assembly plants, chemical factories, fertilizer plants, textile factories, paper factories, oil refineries, and tire factories.

CHAPTER 2

PRESENT LAND USE AND INSTITUTIONS

Land Use

Thailand has a total land area of 321,250,000 rai or approximately 513,000 square kilometers. The density of the population is about 53 persons per square kilometer but a density as high as 110 persons is encountered on the plains of the river basin in Central Thailand.[1] About 21.6 million people or about 3,600,000 families live on farms. Possibly 18.9 million people or 70 percent of the total population cultivate rice. Since almost 60 percent of the total area in the present is covered by the forest, Thailand can boost of a sufficient supply of an arable land in the near future. But in the far future, the supply of land for agriculture is limited because the government policy is strongly to reserve at least 50 percent of the total area for permanent forest.[2]

1/ Erich H. Jacoby: The Agrarian Unrest in South-east Asia, Leaders Press Private Ltd., Bombay, India, 1961, p. 239

2/ Government of Thailand: 6-year Development Plan; 1961-1966, National Economic Development Board, Ministry of National Development, Bangkok, Thailand, p. 55

Approximately one fifth of the land area of Thailand is classified as arable cropland and slightly over one-half as forest and grazing land. The rest is unclassified and swampy. These classifications overlap as each involves a considerable area that is used for more than one purpose. When the multiple use lands are assigned to a major use, it appears that in 1961 20 percent of the total land is farm land, 58 percent is forest and grazing land, and less than one percent is swamps and lakes. Twenty-one percent was unclassified. This includes approximately 1,296,000 rai of water area.

As shown in Table I, around 78 percent of the total land is used for cropland, grazing, forest, and other agricultural purposes. Of this total farm land, about 87 percent or 56 million rai were cultivated in 1961. This included 58 percent of the area in rice and 29 percent in other crops. In 1961, the planted areas of corn, rubber, and kenaf were ranked second, third, and fourth respectively. About 21 percent of the total was not classified. It includes roads, highways, rivers, canals, urban uses, railroads, recreational land uses, and the others.

TABLE I -- Thailand: Major uses of land, 1961

Land Uses	1000 rai	Percentage of total
Rice	37,948	11.8
Tree		
A. Rubber and Cocoanut	3,420	1.1
B. Fruit Trees	6,076	1.9
Upland crops	9,023	2.8
Total cultivated area	56,467	17.6
Farm woodland	4,526	1.4
Miscellaneous	3,470	1.0
Total land in farm	64,463	20.0
Forest and grazing land	187,526	58.4
Swamps and lakes	1,296	.4
Unclassified*	67,965	21.2
Total land area	321,250	100.0

* Including roads, highways, rivers, canals, urban areas, railways, and others

Source: Agricultural Statistics of Thailand 1961, Division of Agricultural Economics, Ministry of Agriculture, Bangkok, Thailand

THE

There were 8,191 kilometers of highways, roads, and feeder roads and 3,494 kilometers of railroads in 1958. An increase of 5.3 percent in highways, roads, and feeder roads and of 11 percent in railroads is expected to occur each year.[3/]

Planted areas in Thailand have steadily increased during the past decade. Planted areas of rice made only modest percentage increases (Table II), but the planted area of other crops increased more than two fold. The areas of upland crops such as corn and cassava made striking increases of more than ten fold, and the kenaf area increased approximately thirty fold, (see Table III). There is no evidence the resources have been withdrawn from the production of traditional crops, such as rice, to produce the new crops. It is possible that planted areas in some parts of the country have been counted twice since in the same area the farmers can grow more than one crop in a year. It is difficult here to figure out how many rai of those areas have been counted twice.

3/ Chaiyong Choochart: Agricultural Economics of Thailand, Kasetsart University, Bangkok, Thailand, 1960, p. 29.

TABLE II -- Thailand: Planted areas of rice and other crops, 1950-1961

Year	All other crops		Rice		Total	
	1000 rai	%	1000 rai	%	1000 rai	%
1950	4,560	100	34,625	100	39,185	100
1951	5,020	110.1	37,245	107.5	42,265	107.8
1952	5,093	117.1	33,551	96.9	38,634	98.8
1953	5,288	115.9	38,575	111.1	43,863	111.4
1954	5,621	123.1	34,732	100.3	40,344	102.9
1955	5,801	127.2	36,060	104.1	41,861	106.8
1956	6,378	139.9	37,648	108.7	44,026	112.6
1957	8,007	175.8	31,717	91.5	39,724	101.3
1958	8,334	182.7	36,329	104.9	44,663	113.9
1959	9,417	206.5	38,217	110.3	47,634	121.5
1960	11,482	251.8	37,107	107.1	48,589	124,3
1961	12,107	265.5	37,948	109.6	50,055	127.7

Source: Agricultural Statistics of Thailand 1961, Division of Agricultural Economics, Ministry of Agriculture, Bangkok Thailand

THE

TABLE III -- Thailand: Planted areas of principal agricultural commodities, 1950-1961

Commodity	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961
	1000 Rai	1000 Rai	1000 Rai	1000 Rai	1000 Rai	1000 Rai	1000 Rai	1000 Rai	1000 Rai	1000 Rai	1000 Rai	1000 Rai
Rice a/	34625	37245	33551	33575	34372	36060	37648	31717	36329	38217	37107	37948
Corn	215	255	278	295	325	343	508	598	783	1233	2320	2933
Cassava	85	85	85	93	93	85	55	238	273	385	875	938
Sugarcane	333	433	455	510	593	638	750	793	813	913	913	850
Mung Beans	250	200	200	180	195	213	215	235	250	285	290	295
Castorseeds	28	80	78	65	93	90	118	163	143	173	178	178
Peanuts	435	445	445	448	488	495	505	600	615	615	800	800
Soybeans	120	133	148	135	138	133	145	163	140	135	148	153
Cocoanuts	495	578	588	635	735	758	818	840	835	835	835	840
Sesame	118	95	105	93	98	105	108	135	135	133	138	140
Chili b/	---	--	15	17	109	64	175	66	72	77	146	152
Kenaf	30	88	65	60	33	53	108	73	125	275	530	1043
Cotton	225	253	238	250	215	203	250	258	255	298	263	330
Tobacco	190	260	270	333	335	348	350	380	378	383	365	365
Rubber	1950	2013	2050	2063	2073	2088	2093	2098	2103	2510	2510	2568
Total	39099	42163	38571	43752	39900	41676	43746	38362	43249	46468	47411	49533

a/ Data from Table II

b/ Data from 1952-1961 from Agricultural Statistics of Thailand 1961, Division of Agricultural Economics, Ministry of Agriculture, Bangkok, Thailand

Source: USDA, Agricultural Diversification and Economic Development in Thailand, Foreign Agricultural Economic Report No. 8, Economic Research Service, Regional Analysis Division, Washington, D. C.

Institutions

A. Acquisition of Land Titles

Most Thai people have a strong desire for property ownership, particularly for farm and home ownership. For centuries the Thais have believed that "there is fish in water and rice in the field." This sentiment of farm and home ownership has become a part of Thai philosophy. This philosophy has played an important role in the idea of how farmers become land owners.

Land ownerhip in Thailand can be acquired in many different ways. One can list the following ways: grants from the government, private grants by deed, grants by devise, under the laws of descent, accretion,* and by intrusive right.**

A great number of public lands is being granted by the government. This grant will be mentioned under distribution and settlement projects in Chapter 4.

---

*One who owns land on the river banks, lake shore, and sea shore might have the title on land accrued to his old parcel by silting.

**One who intrudes on somebody's land and works publicly on the land for ten years without any objection of the owner, might have the title by claiming for the title from the court.

The acquisition under private grants by devise, and hand down land title under the law of descent are widely practiced among the Thais. With a will the testator can bequeath any land he owned to any person or organization of his choice. When the property owner dies intestate, his estate will be settled under the laws of descent.

B. Land Tenure

The hope for a better life for the Thai people is tied directly to the system of land tenure. For the relationship established among men in the control and use of land affects the utilization of land. Production may be influenced to increase or decrease by the laws, customs, and traditions associated with the land.

The desire for the real rights in farm and home ownership of the Thai people has come into promise since the promulgation of the Title Deed Act of 1906. Before that the peasants were under the capitation or poll tax and enjoyed their living by cultivating the king's land. The system of farm and home ownership of the Thai peasants in the old days might have been a major cause for the habit of shifting cultivation by the peasants. The hope of giving them the real rights in land might be a way which provides them an opportunity for farming and improving their farm lands rather than shifting cultivation.

Approximately 83 percent of Thai farmers are owner operaters. Large farms are quite rare. In 1953, there were 2,119,287 farm families holding an area of 54,296,133 rai. The average farm size is around 25 rai or 10 acres. Fifteen percent of the farm families held less than 6 rai. Twenty-seven percent held farm land between 6-15 rai, 28 percent held farm land between 15-30 rai, and 9 percent held in excess of 60 rai. The largest farm size was in the central plain -- averaging around 31 rai, and the smallest was in the northern part averaging about 10 rai.[4/] Traditionally the Thai farmer cultivates as much land as his family is able. With an average family of six and water buffaloes, the farmer can cultivate a small farm. The average farm size in the Northern region is relatively smaller than those in the other regions because double-cropping has been practiced widely in this region.

In 1953, the national average gross income per farm was 4,966 baht or around 248 U.S. dollars -- composed of 3,240 baht from farm sources and 1,756 baht from non-farm sources. In a study conducted in Thailand in the same year it was found that on the 20 percent of the farms which had debts, the average debt was 241 baht.[5/]

4/ Ibid., p.210
5/ Ibid., pp. 20-21

TH

C. Tenancy

In 1958 approximately 17 percent of the farmers were tenants. Many different types of rental arrangements are used in leasing landed property such as cash rent, crop share, or a combination of these. Another type of leasing arrangement is Kai-Fark.* This special type has been used by the land owner who leaves his land and works as a petty tradesman and by the rich farmer. In Thailand, cash rent and share cropping are quite common. Share cropping is the most common method of leasing - often used in fertile land areas where both landlord and tenants live in the same village.

Under the sharecropping system, the landlord supplies the land and seed, the tenant provides labor and equipment. At harvest, the tenant receives one-half of the crop.

In cash renting arrangements, most landlords ask tenants to forward the part or full payment of the rent at the time the contract is drawn. Both cash and sharecropping leases can be for one, two, or three years.

---

*Under Kai-Fark system the farmer who wants to rent the land must deposit his money with the land owner. The depositor, then, has a right to work on the land belonging to the land owner for a certain period of time, usually three years. After three years the land owner must repay the depositor the same amount of money deposited. In case non-repayment occurred the land title will be transferred to the depositor.

The year-to-year lease is most prevalent. In a cooperative society of the tenants, leasing arrangements can be drawn for 20 years.

In 1958, about 17 percent of Thai farmers were tenants. The highest percentage of tenants was in the central part of the country. It has been found that most farmers who live in the neighborhood of Bangkok were tenants while the landlords live in the city. 6/

In northern Thailand where rice crops can be grown twice a year, the rent paid in kind and in cash is relatively high -- averaging around 13.49 Tung* or 140 kilograms of paddy worth about 112 baht per rai. The average rent paid in Thailand both in kind and in cash is around 55.31 baht per rai. 7/

6/ Ibid., p. 224

* Tung is a unit of quantitative measurement. Practically, it is used in measuring grains in Thailand. A Tung consists of 20 liters.

7/ Ibid., p. 224

TABLE IV -- THAILAND: Farm Units and Range of Holdings, 1953

Range of Holdings (rai)	Farm Units	Percentage
Less than 6	318,953	15.05
6 - 15	568,181	26.81
15 - 30	602,089	28.41
30 - 60	450,560	21.26
More than 60	179,504	8.47
Total	2,119,287	100.00

Source: Agricultural Economics of Thailand, Kasetsart University, Bangkok, Thailand, 1960

CHAPTER 3

NATIONAL LAND POLICIES

Land Policies Prior to 1961

Over a thousand years ago, the Thais sought a better livelihood within the Yangtze River Valley in the South of China. Under the Mongols' influence in the 13th century, they began drifting southward, settling in the valleys of Salween, Mekong, Irrawaddy, and Chao Phya Rivers. By the end of the 13th century the Kings of Sukhothai had established the beginnings of the modern Thai nation. Sukhothai gave way by the end of the 14th century to the greater power of the Thai Kingdom of Ayudhya. The kingdom of Ayudhya lasted, except for 15 years of occupation by the Burmese, until the middle of the 18th century.[1/]

In fact, Central Thailand; Chao Phya River Valley, had been settled long before by the native people of Mohn and Khmer. After Sukhothai gave way to Ayudhya, the native people were eventually absorbed by the settlers. During 1238-1906, all lands in the kingdom had been regarded as the King's property alone. Even the people had no real right

---

1/ Rong Syamananda: An Outline of Thai History, Siva Phorn Limited Partnership, 74 Soi Rajjataphan, Makkasan Circle, Bangkok, Thailand, 1963, pp. 1-12.

in land, they enjoyed their living by cultivating the king's property. Custom and tradition had given the so-called freeman the right to take as much land as his family could cultivate. Nevertheless, the freeman could not sell or mortgage his land. For the public purposes, the king could take it back from the people without any compensation for their land improvements.[2/]

The system of escheat without any compensation to the people who utilize the land had been successful until the regime of King Rama III or Pra Nang Klao; 1824-1851, of Bangkok. King Rama III thought that the system of escheat without any compensation was discouraging to the endeavors of the people who put much effort in improving their lands. Thus, escheat of landed property has been offset for the improvements since this regime.[3/] In 1831, attention was also turned to the problem of inundation over the farm fields during the rainy season by starting a recording of the level of flood water.[4/]

2/ Chaiyong Choochart; Agricultural Economics of Thailand, Kasetsart University, Bangkok, Thailand, 1960, p. 213.

3/ Ibid., p. 213

4/ Government of Thailand; Agriculture in Thailand, Ministry of Agriculture, Bangkok, Thailand 1961, p. 128

The great promise of the private right of land ownership has evidently come into light since the debut of the Land Department in 1901. This agency keeps records of the land which is already possessed and utilized by individuals. Five years after the Land Department was established, the title deed was adopted and underpinned by the title Deed Act of 1906 to represent the real rights on land of the people.[5/] At present, approximately 12 million rai (0.04 percent of the total land area) or about 19 percent of farm land, has title deed. Except for a very small woodland area, privately acquired, all forest areas may be said to be State owned.[6/] The work of issuing the title deed to individuals has been done very, very slowly since the enactment of the Title Deed Act of 1906 because of the shortage of surveyors.

In 1893 difficulties arose with France, which resulted in payment by Siam* of an indemnity of 3,000,000 francs, and the cession of certain territory, including a portion of the State of Laung Prabang. The rest of Laung Prabang was ceded to France in 1907.[7/]

5/ Chaiyong Choochart; Agricultural Economics of Thailand, Kasetsart University, Bangkok, Thailand, 1960, p. 213.

6/ Ibid., 214.

* Before June 24th, 1939, Thailand was known as Siam.

7/ W. A. R. Wood; A History of Siam, The Siam Barnakich Press, New Road, Sikak Phya Sri, Bangkok, Thailand, 1933, p. 279.

The idea of water control to prevent flood which was once examined in the regime of King Rama III had been brought up for consideration in the regime of King Rama V again. The Government employed Mr. Homan Van der Heide, a Dutch expert, in 1902 and Sir Thomas Ward, an English expert in 1913 to make surveys and investigations. Both arrived at the same conclusion that a barrage or diversion dam should be built on the main river, Chao Phya, at Chinat, together with distribution canal systems to supply water to paddy fields on both banks right down to the Gulf, in order to stabilize and to increase yields of rice in the central plain which is called the "Rice Bowl of Thailand." The Government could not raise enough capital to construct the whole scheme, so the lower reaches of the plain were provided with canal systems for distribution and conservation of water as well as for navigation. In October, 1950 the World Bank granted a loan of $18,000,000 for this project. The construction work was started in 1952. 8/

8/ Government of Thailand; Agriculture in Thailand, Ministry of Agriculture, Bangkok, Thailand, 1961, pp. 139-140

In 1914, when the Government was gravely concerned with an increasingly deteriorating economic and social condition of the majority of farmers, the idea of cooperation was first brought to Thailand. The first cooperative credit society on the Raiffiesen line was organized in 1916 to provide loans to its members for paying their old debts and improving their farm lands. The new institution has provided a new hope and opportunity to the farmers in acquiring agricultural credit and land ownership. By enacting the Conserved Land Act of 1935, and the Land Accommodation Act of 1942, land cooperatives, since then, have increased both in type and numbers.[9/]

Land Code of 1954

Before 1855, the year of trade agreement with Great Britian, Thailand had a closed economy characterized by subsistence production. The trade agreements caused an extension of rice acreage and considerable migration to the centers of rice production. Before that land was underutilized to a very large extent. Over sixty percent of the total land area was covered by forest. There was an abundance of land which needed only to be cleared and cultivated.

9/ Government of Thailand; Present Conditions of Agricultural Cooperation in Thailand, Ministry of Cooperative, Bangkok, Thailand, 1962, pp. 1-12

It was the policy of the Government to provide the people a place to work and to live by allocation of the public domain and to specify the real rights of land ownership of the people. Thus, in 1954, the Land Code was enacted. With the promulgation of the Land Code of 1954, the Title Deed Act of 1906 and the Conserved Land Act of of 1935 were repealed by the statement of this Code. Under the Land Code of 1954, the National Land Allocation Commission has been appointed to allocate land to those who have no land or who have inadequate parcels. The effective date of the Land Code of 1954 was the 30th of November, 1954.10/

Under this Code, persons may have landholdings as follows:11/

1. Land for agricultural purposes- not more than 50 rai or 20 acres.
2. Land for industrial purposes not more than 10 rai or 4 acres.
3. Land for commercial purposes- not more than 5 rai or 2 acres.
4. Land for residential purposes- not more than 5 rai or 2 acres.

10/ Department of Land; Land Code of 1954, Ministry of Interior, Bangkok, Thailand, Sec. 1=14.

11/ Ibid., Sec. 34.

Any person who had rights in land before 1954 exceeding the amount specified by the provisions of the Code, could apply to the National Land Allocation Commission for authorization to retain all his land. The law provides that land of low productivity may be given in size exceeding 50 rai up to a maximum of 100 rai but those lands must be declared by Royal Decree to be the lands of low productivity.[12/]

Under Sections 47 and 48, the National Land Allocation Commission may permit a person to have a larger amount of land than that specified in the Code. Each person has to show that he has the ability and need to utilize it. Also, he must operate it himself or prove that his industrial or agricultural work actually requires the use of more than that authorized. In such cases the National Land Allocation Commission may impose conditions the applicant must observe. If the applicant does not observe the conditions, the Commission may order the disposal of all or part of the land within one year.

Land for religious purposes for Wats, Temples, Roman Catholic Churches, Christian Foundations or Moslems may be acquired with the permission of the Minister of Interior.

12/ Ibid., Sec. 45 and 46.

No more than 50 rai may be obtained. In appropriate cases the Minister may allow the acquisition of more land. These provisions do not affect land acquired prior to the effective date of the Code nor to the acquisition of land of the Moslem Musyid under Moslem Law in four provinces in Southern Thailand.[13/]

The legislative body desires that land titles remain in the hands of the Thais. Sections 86, 87, and 88 of this Code state that aliens may acquire land for residence, commerce, agriculture, burial, public charity, or religion only in amounts stated below:

1. Residential purposes,not more than 1 rai per family.
2. Commercial purposes,not more than 1 rai.
3. Industrial purposes,not more than 10 rai.
4. Agricultural purposes,not more than 10 rai per family.
5. Religious purposes,not more than 1 rai.
6. Charitable purposes,not more than 1 rai.
7. Cemetery, not more than half rai per pedigree.

The prescribed amount will not affect ownership by aliens in excess of that amount provided the land was obtained prior to the effective date of the Code.

13/ Ibid., Sec. 45 and 46

The ceiling on family holdings under the Land Code of 1954 is basically based on the principle of maximization of self-employment and more particularly on the need to satisfy the land hunger of landless people.

What concerns us here is that the ceiling on peasant holdings can have very serious consequences in agriculture. An immediate consequence is the elimination of the large peasant holdings which were effectively peasant proprietorships. A ceiling on family holdings is a ceiling on how far a peasant may go as long as he remains as a peasant. Their abilities and enterprises may exceed the ceiling limits. Thus, they would sooner or later leave agriculture. The agricultural sector, therefore, might become progressively depressed and politically weak.

In Northern Thailand where double cropping is widely practiced, the average farm size is around 10 rai. The average farm size in Central Thailand is around 31 rai, while 500 rai farms and upwards can be found. This depends on the stage of technology, labor, and capital they have. The farmers, in general, obtain only average output and seldom think in terms of marginal productivity of labor and capital. They seldom take the costs of labor and capital into account and they lack off-farm job and investment opportunities.

For the consideration of production units, it seems that even in agriculture, in order to realize maximum output from a given amount of resources, the production unit has to be of an optimum size on which existing labor and capital can be fully utilized rather than leaving some parts idle or underemployed. This depends on the labor and capital the farm unit has and on the stage of technology existing on the farm. Perhaps 5 arable rai may require only a hoe; 20-40 rai, a plough and an animal; 1,000 rai and upwards, a tractor. There is little benefit to limiting the family holdings. With the ceiling limits, the entire agriculture is organized in production units below the optimum. This prevents the formation of existing capital compatible with the optimal factor ratios and available techniques.

It has been recognized under the 6-year development plan that industrialization and agriculture must be developed and tied together. Besides labor, capital, and management, land is important. To create new heavy industry in the country under the 6-year development plan, the government has put much emphasis on foreign investment.

As mentioned on page 28, an alien family may acquire the rights in land ownership of not more than 1 rai or .4 acre for residential or commercial purposes, or 10 rai or 4 acres for industrial or agricultural purposes. In general, 10 rai or 4 acres are not sufficient for heavy industry since it requires land for the plant site, storage site, and for residential areas for workers and others.

Entrepreneurial and managerial talent is one of the important mechanisms in economic development, but it is scarce in such an underdeveloped country as Thailand. The provision under the Land Code of 1954 for aliens in acquiring the rights of land ownership might be a barrier that would hamper foreign investment, even though the problem of land ownership of aliens in acquiring rights in land can be overcome by leasing arrangements. Legally the lease of such immobile property as land cannot be drawn for a period of more than three years. The provision of landownership under this Code should have been amended to open a wider opportunity for those foreign entrepreneurs and managers to invest in the country. Also, the effective period of leases of landed property should be long enough to warrant a long term investment.

Taxation of Landed Property

The land tax in Thailand is based on the assessed value of the land itself. This is an ad valorem property tax. The annual tax per rai varies from .8 to 5 baht per thousand. The value of a particular parcel is appraised by local officers. The assessed values are varied. The highest value is 500,000 baht per rai. Land values in rural areas for agriculture outside the municipal or sanitary boundaries vary within a range of less than 200 baht per rai to not more than 4000 baht per rai.

The tax rate per rai and per thousand of assessed value is represented in Table V. The tax rate is 2.5 per thousand baht for land valued at under 200 baht up to 400 baht per rai. The rates are 3.3, 3.8, 4.0, and 4.6 per thousand baht for the lands valued between 400-600, 600-800, 800-1,000, and 1,000-1,200 baht per rai respectively. The rate is 5 per thousand baht for the land valued at over 1,200 to not more than 10,000 baht per rai. For the land assessed at over 10,000 baht per rai, the rate decreases until it reaches the lowest rate of .8 per thousand baht for land valued at 500,000 baht per rai. When land is used for annual crops, the rate is one-half of the rate stated above.

As indicated above, the agricultural lands have values of not more than 4,000 baht per rai. The lands having values of more than 4,000 baht per rai are the lands in towns or cities which have been used for residential, industrial and commercial purposes. These lands are generally owned mostly by people in politics and ones who are in the Royal families.

A quick look at the land tax rate per thousand of assessed value indicates that the rates per thousand are varied. This is because the rates of increase in tax per rai of lands in some categories do not resemble the rates of increase in assessed value. There is no reason why most expensive lands have the least taxes except that it is a result of political influences.

Comparatively, agricultural lands have a heavier tax burden than urban lands. Possibly it was the policy of the government to get high public revenue since larger amounts of land are utilized under agriculture.

It is the policy of the government to stimulate farmers to grow annual crops, especially cash crops which can be turned into cash within a few months and are in demand in the market. The policy thus provides that land in annual crops is charged at one-half of the rate per rai stated in Table V. However, the rate of land tax is going to be changed since the rate of 2 or 3 per thousand of assessed value has been proposed to the Government by the Revenue Department.

TABLE V -- Thailand: Land tax rate per rai and per thousand of assessed value

Assessed value (Baht per rai)	Tax per rai1/ (Baht)	Rate per thousand1/
Less than 200	0.50	2.5
200-400	1.00	2.5
400-600	2.00	3.3
600-800	3.00	3.8
800-1,000	4.00	4.0
1,000-1,200	5.50	4.6
1,200-1,400	7.00	5.0
1,400-1,600	8.00	5.0
1,600-1,800	9.00	5.0
1,800-2,000	10.00	5.0
2,000-2,200	11.00	5.0
2,200-2,400	12.00	5.0
2,400-2,600	13.00	5.0
2,600-2,800	14.00	5.0
2,800-3,000	15.00	5.0
3,000-3,500	17.50	5.0
3,500-4,000	20.00	5.0
4,000-4,500	22.50	5.0
4,500-5,000	25.00	5.0
5,000-5,500	27.50	5.0
5,500-6,000	30.00	5.0
6,000-6,500	32.50	5.0
6,500-7,000	35.50	5.0
7,000-7,500	37.50	5.0
7,500-8,000	40.00	5.0
8,000-9,500	42.50	5.0
8,500-9,000	45.00	5.0
9,000-9,500	47.50	5.0
9,500-10,000	50.00	5.0
10,000-15,000	55.00	3.7
15,000-20,000	60.00	3.0
20,000-25,000	65.00	2.6
25,000-30,000	70.00	2.3
30,000-40,000	80.00	2.0
40,000-50,000	90.00	1.8
50,000-60,000	100.00	1.7
60,000-80,000	150.00	1.9
80,000-100,000	200.00	2.0
100,000-200,000	250.00	1.3
200,000-300,000	300.00	1.0
300,000-400,000	350.00	0.9
400,000-500,000	400.00	0.8

1/ Land in annual crops is charged at half the rate

Source: Government of Thailand: Assessed Land Value and Land Tax, Revenue Department, Ministry of Finance, Bangkok, Thailand

New Land Development Policies

While other less developed countries in Asia have been busily formulating multi-year development plans, Thailand has proceeded without one. Since fiscal year 1957, the United States Operation Mission to Thailand has provided economic advisory services to the Government of Thailand. This, until late 1961 was principally at the Minister of Finance level; however, in August of 1959, resulting from recommendations of a World Bank Economic Survey Group and particularly from the advice of economic advisors, a 6-year development plan was adopted. With the primary responsibilities of developing multi-year development projects, the National Economic Development Board has now been established and underpinned with strong legislation.

The Government of Thailand recognizes the need to increase agricultural production, and policies are being implemented toward thes end. The development plan covers a wide range of activities including agriculture and cooperation, interior, health, communication and transportation, education, industry, commerce, and State enterprises. The plan started late in 1961.

The government policy was designed to encourage diversification, extension of transport facilities to more remote regions of the country and to encourage the intensity of agricultural land uses by increasing the relative amount of capital and labor, combined with a unit of land in the production process. Fertilizer, insecticides, machinery, and other new techniques have been introduced for farming. The government does provide minimum support prices for selected crops such as corn and beans, and in irrigated areas water is provided free to farmers. For the fulfillment of the economic development goals, the State's Railway and Highway Departments are working on major expansion schemes, and the Yanhee Dam on Ping River is getting underway providing electrical power and irrigation water. It was estimated that at the end of 1963 the Yanhee multipurpose project will provide an ultimate capacity of 560,000 kw. for household and industrial consumption.[14/]

The land problems in the present are quite different from those in the old days. Since all lands were once the King's property and with the sparsity of population and self-sufficient

---

14/ P. T. Ellsworth, et.al., A Public Development Program for Thailand, the John Hopkins Press, Baltimore, 1963, p. 115.

domestic production, there was no land problem. The policy during 1868-1910 was concerned largely with the provision of land ownership. Under the development plan, land policies have been emphatically directed on the wise uses of land resources and the promotion of land ownership among the landless people. Since land classification is useful for our development program by providing basic information and knowledge about land, 32,486,300 baht have been provided by the government for studying the physical characteristics of land for land classification.[15/] This program is getting underway under the overall economic development plan which has been started since 1961.

The main new land policies under the 6-year development plan have been pushed toward the ends of:

1. Providing land ownership among the landless people.
2. Increasing production per unit area.
3. Increasing production from land resources to satisfy the needs of the country.
4. Ending improper land utilization in some areas.
5. Ending the primitive shifting cultivation practices in many regions, particularly among the hill tribes.

15/ Government of Thailand: Land Classification, Department of Land Development, Ministry of National Development, Bangkok, Thailand, 1960, pp. 84-85

6. Eliminating absentee land ownership, especially in the Central Plain area.
7. Extending credit facilities to permit farmers to improve farm land.
8. Bringing idle land into production, and
9. Studying the characteristics of land and land classification.

What concerns us here is complicated because land development goals are so vague and far-reaching. The study of physical characteristics of land and land classification which can provide basic information for the development programs was just started in late 1961 and is expected to be completed in 1966. What we know about the land is very little. The degree of unreliability of statistical data being used in the present is high since they were made up in the offices in the rural areas by the officers who can count even fish in the rivers and marshes. Undoubtedly, it takes many decades to reach these far-reaching goals.

Thailand suffers, in common with most underdeveloped countries, from a shortage of qualified personnel in its public services. To remedy this shortage, the government financed the education or training of some 2,000 Thais in approximately 40 countries. In addition, technical assistance programs of the United States, the Colombo Plan, the United Nations, and

others provided for the foreign training of another 300 to 400.[16/] These training programs are expected to continue. Thus, it is hoped that there will be room for expansion at least for the time being. However, the need to be emphasized is not the quantity of the training provided, but its quality and its suitability to the particular jobs individuals are going to fill.

So long as there is a shortage of people trained for technical jobs, it is essential that the scarce supply be carefully allocated. This means that persons with special training should be appointed only to positions that require that particular kind of training.

The success of land development of the country depends largely on the definite goals and the appropriate measures directed toward the goals. And, those measures can be soundly based only when planning and direction are guided by competent technical advice rather than political influences. One urgent need is a specific case study in particular areas to get basic information for planning and correctly attacking the problems. It is hoped that the Department of Land Development which was established late last year will provide such knowledge and information on land development in the country.

16/ P. T. Ellsworth, et.al., A Public Development Program for Thailand, the John Hopkins Press, Baltimore, 1963, pp. 219-220

The problems here in the new land development policies concern the question of intensive versus extensive land uses. As mentioned in the beginning of pages 36 and 38, the new land development policy is being directed toward the intensity of agricultural land uses and bringing idle land into production. This represents a conflicting view point of intensive and extensive land uses. The policy must explicitly indicate where intensive or extensive practices should be emphasized. Possibly the intensive practices should be focused on the present farm lands while the extensive practices should be considered in the settling of non-usedor idle lands.

In most part of the country, lands are flooded during each rainy season. Under this natural phenomenon, it is difficult for the farmers to apply fertilizer on their farms because flood water will wash out the fertilizer from farm lands before it is utilized by the crops. Therefore, the first priority in the promotion of more intensive agricultural land uses should be focused on farm lands in irrigated areas where water can be regulated and controlled and leave the second priority on the present farm lands outside of irrigation.

National Forest Policy

One aspect which the policies under the 6-year development plan are being directed toward, is national forests. Briefly, the aims of the present National Forest Policy are as follows:[17/]

1. In order to meet the requirement of the country and of the people as a whole, the Department of Forestry is to set aside an area of not less than 270,000 square kilometers or 168,750,000 rai of forest land to be permanently reserved.
2. Reserved forests are to be guarded against damage or destruction by men, animals, insects, fire, and other natural causes.
3. Protective Forests, reserved primarily for the purpose of soil conservation, watershed protection, and to be kept from damage by other natural phenomena such as storm, erosions, or flood, are to be kept strictly as protective forests, regardless of the direct utility of the major and minor products available therefrom. Part of this category of forests will be formed into National Parks.

17/ Government of Thailand; Agriculture in Thailand, Ministry of Agriculture, Bangkok, Thailand, 1961, p. 186.

4. Production Forests, apart from those set aside for protective purposes, are to be worked under proper working plans; the main object of which is to place them on a sustained-yield basis.

The projects which are being directed toward this end will be discussed in the latter part which relates to the land development programs in Chapter 4.

Land Classification

For a decade the general concept of land classification such as cropland, pasture or grazing land, mineral land, residential land, and barren or waste land has been employed in Thailand. The classification of land is based on the present use. It is complicated by the presence of over-lapping use patterns. Much knowledge is required in land classification.

There are many different ways of classifying land resources. Classification may be based on market value for taxing or value for mortgage purposes, capacity to produce, topography and drainage, and so forth. Land classification is useful for our development program since it provides basic information and knowledge about the land. It facilitates planning, purchasing, developing, and settling land. It can also provide a basis for improving land appraisals, tax assessments, and credit policies. Previous governments of Thailand have given little attention to land classification. Land and soil classification

officially started in Thailand when Dr. Robert L. Pendleton arrived in 1935. With limited funds and means of travel into rural areas, knowledge about soil and land use has made slow progress. The lack of an adequate budget and well-trained men is serious. Various obstacles have prevented the staff from carrying out field work.

Under the 6-year development plan, the project has been undertaken by the Land Classification Committee which attaches to the Ministry of Interior. Late last year all work was transferred to the new Department of Land Development which was established within the Ministry of National Development.

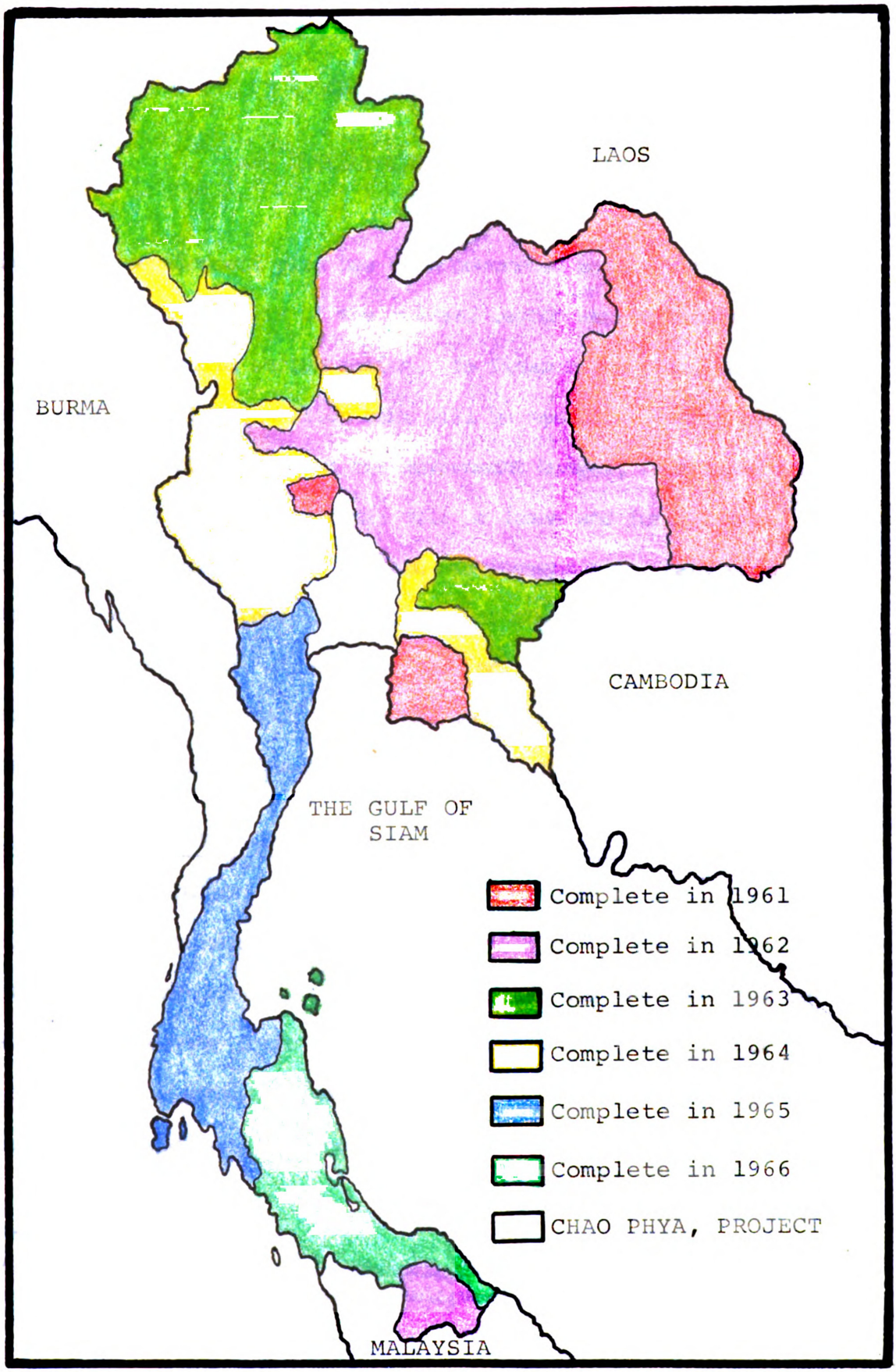
Under the new administration of the Department of Land Development, the former land classification project of the Land Classification Committee continues. A training program has been added. The 3-year training program which began at the beginning of this year will provide the students the techniques and experiences of land classification. The trainees will receive theory both in the class room and field practice. Trainees will learn how to operate tools and equipment. The training period is divided into two periods -- six months for class work and six months for field work. It is expected that 300 well-trained young men will be furnished by the program in three years. The trainees will have to

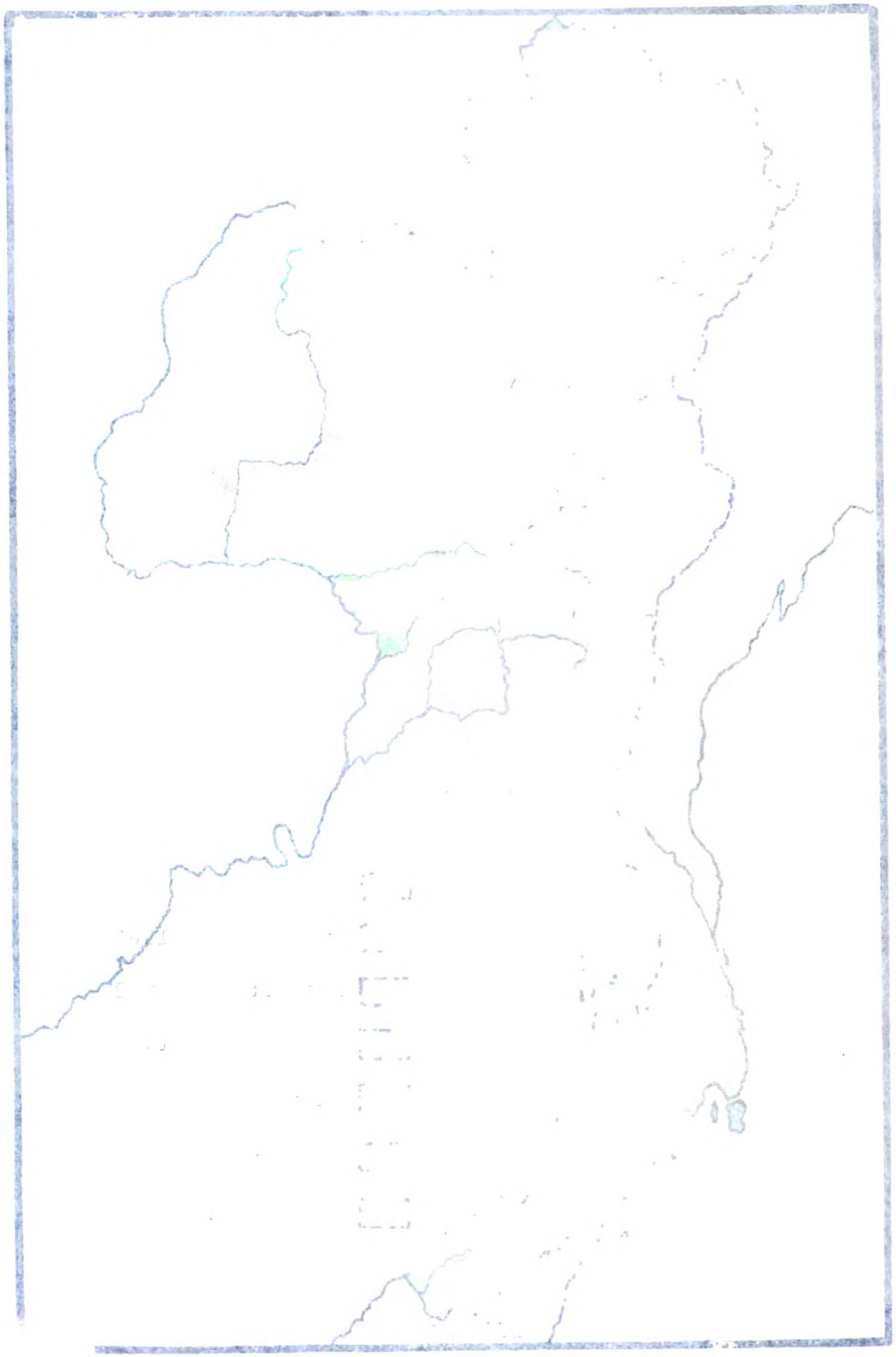
serve in the Department at least three years after they complete their training. If they do not, a fine of 8,000 baht will be imposed.

Due to the political situation in Laos and low level of living of the people in the Northeastern region, many special development programs have been carried out in this region. In the land classification project first priority has been given to the Northeastern region.

Due to the convenient transportation in the Central plain within the area of Chao Phya River Valley, land classification and survey in this part was completed (Figure I).

MAP SHOWING COMPLETION DATE OF
WORK PLAN OF LAND CLASSIFICATION PROJECT IN THAILAND;
1961-1966





CHAPTER 4

LAND DEVELOPMENT PROGRAMS

The 6-year development plan has been concerned mainly with the public sector. The economic results of the private sector were estimated in relation to expected public sector action. To finance the plan, the government estimated that 22,000 million baht will be needed. Seventy percent of this amount will be obtained from the government budget, from taxes and other sources. The rest of the funds will be loans and foreign aid.[1/]

To fulfill the goals stated in the development plan, many government projects have been supported. The projects of the plan consist mostly of carrying on the work which was started earlier. They have been revised and improved to relate them better to the new economic climate. In the following sections a number of land development aspects of the plan will be reviewed.

The Land Distribution Project of the Department of Land

The land distribution project has been undertaken by the Department of Land, Ministry of Interior since the promulgation of the Land Code of 1954. During the 6-year plan, this work is being revised and improved as a part of the plan. The objective is to provide citizens with land for residential and other purposes. Obtaining new land depends mainly on a person's abilities, his intentions, and the amount of land he already possesses.

1/ Government of Thailand: Economic Development Plan; 1961-1966, NEDB, Ministry of National Development, Bangkok, Thailand, 1960, p.3.

In the promotion of land ownership, public domain is granted applicants. As most people lack the financial resources to buy the land, the government often gives land to the public. Public domain in blocks of less than 50,000 rai is allocated by the National Land Allocation Commission through this project. Larger blocks are controlled by the land settlement project operated by the Department of Public Welfare, Ministry of Interior.

In nine provinces of Bangkok, Torburi, Smutpraken, Smutsongkram, Nontaburi, Phatumthani, Angtong, Ayuthya and Nakornpathom, all lands are occupied. The lands for allocation are in 62 other provinces. Up until now inacessibility and the absence of the private rights of ownership have caused these lands to remain idle. Some parcels are used for shifting cultivation. This system is known as "suitcase" or "field fired" farming. Under shifting cultivation, the trees are cut down, allowed to dry, and burned just before the rainy season. Crops are then planted for two or three seasons before the cultivator moves on to another field. This farming system not only destroys the valuable natural resources but also inhibits conservation.

To get the rights of ownership, the applicant for land must operate all land he possesses within a specific time period. If an applicant is eligible for land under this project, the pre-emption certificate or Bai-Jong* is provided. After the land has been utilized by the applicant, he will receive a certificate of use which can be exchanged for a title deed. The provision under this project is specified on page 26.

---

* Bai-Jong is a document showing authorization of temporary occupation of land.

The Department of Land indicates that there were approximately one million landless families in 1960. To date only 3,000,000 rai of the blocks of less than 50,000 rai in 62 provinces have been surveyed and reported as suitable for cultivation and disposition under this project. If one million landless families need to be settled immediately, the Department of Land estimated that at least 23 million rai of public domain must be brought into the allocation under this project and land settlement projects. [2/] Under this project, it is estimated that only approximately 100,000 rai will be transferred each year, making a total of 600,000 rai under the 6-year program. This will meet only 2.6 percent of the present requirements.

Land Settlement Projects of the Department of Public Welfare

As mentioned previously, the public domain in tracts of over 50,000 rai will be controlled by land settlement projects. These projects are operated by the Department of Land Cooperatives, Ministry of National Development and the Department of Public Welfare, Ministry of Interior. Our attention here will focus on the land settlement projects administered by the Department of Public Welfare. The projects under the Land Cooperative Department will be discussed under Land Projects of the Land Cooperative Department.

At the present time almost 4 million rai are reserved for settlement purposes. The objectives of land settlement projects are:

1. to promote land ownership;
2. To bring idle land into production and to augment national production,

---

[2/] Government of Thailand: Land Allocation Project 1961-1966, Department of Land, Ministry of Interior, Bangkok, Thailand.

3. to prevent shifting cultivation;
4. to reduce tenancy; and
5. to reduce the density of population in the congested river valleys.

Within a typical tract of more than 50,000 rai about 2,000 families are likely to be settled. The government will provide transportation, ponds, markets, sanitation centre or hospital, local offices, school and public security. The land settlement projects also provide long and short term loans to settlers -- not more than 10,000 baht per family. The average loan is around 3,000 baht per family.

Eligibility for settling in a project area is based on the grounds of good health, reputation and previous occupation. Settlers must fully use their lands within a 5-year period. A pre-emption certificate will be issued to a settler who has utilized three-fifths of his land. This certificate can be used for acquiring a title deed. The transfer of ownership is prohibited within a period of five years after the title deed was received except by inheritance. In practice, each family has received a parcel of 25 rai. An extra 25 rai is provided to families of more than 5 members.

Under the 6-year plan land settlement projects provide opportunities to hill tribes, tricycle paddlers, and pensioners as well as the farmer who has no land. Since opium smoking is now illegal, the hill tribes who used to earn their income from planting opium have become unemployed. These people need to have new and permanent occupations. The two land settlement projects in the northern part of the country, Tak and Cheingmai, have absorbed tribal

people. They have started to learn to grow cash crops. Since paddling of tricycles was outlawed in Bangkok in 1960, many former paddlers have gone into other activities. Some have moved to continued paddling in small towns. About 1,500 families of this group of tricycle paddlers have moved to land settlement areas.

An urban renewal program has been pursued effectively in Bangkok. Some of the people who lived in slum areas before have been moved into new residential areas. Others who do not have permanent employment, vagrants, and trespassers have applied for admittance to the land settlement projects. They number over one thousand families. An account of 155 families studied in 1958 shows that they have obtained admittance to land settlement areas.

There are about 3,831,094 rai of public domains which have been set apart for settlement projects. More than 35 land settlement projects have been launched in 28 provinces in 1959, the areas of 559,044 rai were already allocated to 25,282 families. This is about 15 percent of reserved areas. Of this land, 436,570 rai have pre-emption certificates.

An idealistic community under the administration of the Land Settlement Project seems to be political rather than economic since the objectives overlook the economic well being of the settlers. The objective should have been emphasized on the grounds that the settlers can work and live peacefully and earn sufficient income. Most provisions in many settlement areas meet only the need of land ownership among the land hungers. The promise of such sanitation, roads, school, ponds, and public security cannot be provided because of the shortage of funds.

Credit provided under the project is unproductive because it is handed to the settlers in the form of materials, for household, rather than in the form of such service as land clearing or other types of productive purposes.

More than 35 projects of this type; in other words, more than 35 new communities have been started. Their future success is dubious because adequate planning has been lacking. Some of the projects have been abandoned because of malaria, some because of poor soil, and others because of their remoteness.

So long as the Department of Public Welfare cannot provide agricultural advice to the settlers, granting land to those who are not yet settled on land such as, tricycle paddlers, vagrants, trespassers, pensioners, petty tradesman,and others should be avoided. These people should receive highest priority and preparation for moving into non-agricultural sectors, such as road construction. The government policy here seems to step backward rather than forward by trying to put people with non-agricultural backgrounds into agriculture.

So far we have seen two kinds of projects under different Departments; the Department of Land and the Department of Public Welfare, under the same administration, the Ministry of Interior, doing exactly the same thing. This point will be discussed later on.

Land Projects of the Department of Land Cooperatives

Under the regime of King Rama V; 1868-1910, the new ideas about an agricultural bank to provide agricultural credit directly to farmers began to take shape. Since all lands belonged to the king, security for loans was a serious problem. Shifting cultivation which prevailed in many areas also created the

problem of credit supervision. The idea of a commercial bank for agriculture originated after the agriculture bank failed. Under the recommendations of Sir Bernard Hunter, the Managing Director of the Bank of Madras in India, the Siam Kamajol Bank received extra funds from the king to provide credit to farmers. The operation failed. However, in 1916 under J. A. Cable's recommendation, the first credit cooperative society was introduced. In this society the security for credit was the character of the borrowers.

After the enactment of the Conserved Land Act of 1935 and the Land Accommodation Act of 1942,the idea of developing a land cooperative society came about. The Acts have provided opportunity for the people who want to help themselves. The concept of self-help and mutual help has led to land ownership. With mutual responsibilities among the settlers in the new community they can get sufficient loans for improving their lands and for operating their farms.

Under the Conserved Land Act of 1935, large tracts of land are provided from public domains. Sometimes the government negotiates with big landholders who live in the city to lease their lands to farmers or to sell to the government their lands at nominal prices. The land then transfers to the land cooperative society.

The first land cooperative was established in Cheingmai. Since then, the societies have made much progress in financing and improving standards of living for their members. Agricultural cooperation has been classified into four main categories. The four categories are:

A. Cooperative Settlement Societies

The land settlement cooperative is the fundamental type of land cooperation in Thailand. It was the first of these kinds of cooperatives

in the country. By the end of 1963, there were 247 societies covering a total area of 133,594 rai. The cooperative land settlements are of three types; cooperative for agricultural production, for salt farming, and for fish culture.

These cooperative societies have been organized on an unlimited liability basis and they have received loans from the government. In the land settlement cooperative societies each family receives 30 rai at a price ranging from 2 to 8 baht per rai depending on the productivity of the land. Payment for the land must be started on the fifth year of settlement. Ten percent of the price can be paid each year thereafter. The ownership of land will be deeded to the settler on two conditions that the land is fully used and that all long-term credit, including land charges, have been fully paid.

For the years of the multi-year development plan, 1961-1966, the land target under the cooperative land settlement system is approximately 185,000 rai in 8 provinces. During each of the last 3 years of the plan, it is anticipated that about 1,600 landless families will obtain land from the program. [3/]

[3/] 1964-1966 Target, Department of Land Cooperatives, Ministry of National Development, Bangkok, Thailand, 1963, pp.3-4.

TABLE VI -- THAILAND: Areas and Numbers of Cooperative Land Settlement Societies, 1963

Type	No. of Society	No. of Families (member)	Area (rai)
Agricultural production	224	2,174	118,616
Salt farming*	17	231	7,868
Fish culture	6	79	7,110
TOTAL	247	4,484	133,594

* Operating within the areas stretching out into the sea.

Source: Cooperative Statistics 1963, Department of Land Cooperative, Ministry of National Development, Bangkok, Thailand.

B. Land Hire-Purchase Societies

The primary objective of land hire-purchase societies are to help landless farmers to become landowners through the hire-purchase system, to eliminate absentee land owership, and to reduce tenancy.

Generally the members of cooperatives of this type were tenants working on the rental farms belonging to the landlords who live in cities. The government helps them to negotiate with the landlords in acquiring land for allocation among them through hire-purchase systems. Under this system the members are both tenants and purchasers at the same time because they have to pay both the rent and part of the price of the land for a certain period of time, usually 15 years. After they have fully paid the price of the land they become landowners.

The first four land cooperatives of this type were composed of 68 families covering an area of 4,109 rai. This land was purchased from the king by the Department of Land Cooperatives at a price of 61,068.90 baht or 15 baht per rai. The societies, then, made a hire-purchase contract with the Department of Land Cooperatives. By the end of 1950, the first four societies paid all the price of the land. The members of the societies, since t hen, have received ownership of those properties.[4/]

Under this project each family member received at least 2 units* of alloted land. A family with a dependent over 18 years of age may acquire

---

4/ Manoon Wiriyanon: Land Cooperative in Thailand, Dept. of Land Cooperative, Ministry of National Development, Bangkok, Thailand, 1964, p.15.

* 1-unit in transplanting farming consists of 15 rai and 20 rai in broadcasted farming.

one more unit of land for each dependent, but not more than 4 units will be provided to each family.[5/] In 1963, there were 51 cooperative societies of this type operating on an unlimited basis in an area of 37,774 rai. These societies have been made up of 791 families.[6/]

Up to this point we have seen four types of land projects. All of them are trying to do the same thing which is providing land ownership to the landless people. Undoubtedly the consequence of providing land ownership to the landless people is not only the laying down of a good sociopolitical ground but also a help in solving such land problems as shifting cultivation, absentee land ownership, and tenancy. These projects have brought quite a number of idle lands into production. None of them pay any attention to the increasing production per unit of area which is stated in the national land development goals and this should have been regarded as a goal of utmost importance because the yield per rai of rice, the traditional crop, is comparatively low. This might be due either to the deterioration of the land itself or to low productivity land which has been brought into production.

The handicap in four groups of land projects is the lack of good agricultural advice. This is regrettable since the farmer's knowledge and experience are so limited that much of the land is used for the

---

5/ Ibid., p.17.

6/ Government of Thailand: Cooperative Statistics, 1963, Dept. of Land Cooperatives, Ministry of National Development, Bangkok, Thailand.

"slash and burn" of shifting cultivation. The heaviest burden is in the land settlement projects of the Department of Public Welfare because their settlers have had various kinds of previous occupations. These projects should have close coordination with the Ministry of Agriculture rather than establishing agricultural extension units within the Departments themselves.

The cooperative settlement projects of the Land Cooperative Department, Ministry of National Development, and land distribution projects of the Department of Land, Ministry of Interior, seem to have less problems because they had considerable experiences before launching the 6-year development plan. The people who acquire land-ownership through these two projects have had previous occupation in agriculture. The plan has also been well established and arranged. The cooperative officers in charge of the settlement appear energetic and devoted to their jobs and their satisfactory record in the collection of installments and interest on loans speakswell for the operation of the settlements.

The Department of Public Welfare--sponsored settlement programs may be said to be political rather than economic. These programs should be brought under the jurisdiction of the Ministry of Agriculture to insure that they are established and directed with sound technical advice. Possibly, the Public Welfare Department should withdraw from agricultural operation and land management, leaving these functions to the Department of Agriculture, Ministry of Agriculture, but instead provide guidance and advice with respect to the selection of distressed non-agricultural families and social aspects of their settlement.

C. Land Tenant Societies

The purpose of a cooperative of this type is to acquire a long term lease for farmers. In many cases, a large scale landlord prefers to hold his land and sometimes he sets a very high price for his land. This hurts the purchasing power of farmers who wish to acquire land ownership through the hire-purchase system. To stimulate land improvement and to insure good working conditions on rental farms in the future, the government helps those land tenant societies in negotiating with the landlords in cities to get long term leases for farm lands.

In 1953, there were 14 land tenant societies in Thailand. These societies were composed of 201 families covering an area of 10,008 rai. 7/ Leases acquired through the cooperative societies of this type are in cash at fixed rent rate covering at least 20 years. These societies have swept the Nai-Kong-Nai* out of the central plain. By the end of 1963, there were 21 societies with 1,685 families as members on rented lands of 14,493 rai. 8/ Under the 6-year development plan, one more cooperative society of this type will be organized.

7/ Manoon Wiriyanon: Land Cooperative in Thailand, Department of Land Cooperative, Ministry of National Development, Bangkok, Thailand, 1964, p.18.

* Nai-Kong-Nar is one who rents farm lands directly from the landowners in the cities and sublets these farm lands to local farmers at a higher rental rate. These people were once prevalent in the central plain of Thailand.

8/ Goverment of Thailand: Cooperative Statistics 1963, Department of Land Cooperatives, Ministry of National Development, Bangkok, Thailand.

D. Cooperative Land Improvement Societies

The purposes of an organization of this type are to encourage scientific and intensive farming among farmers who have adjacent farm lands. There are two types of cooperative land improvement in Thailand. One is a pure land improvement or irrigation cooperative society. The other is a credit and land improvement society. The former is for farmers who have adjoining plots of land and generally have high economic well-being. The members of this society form together to eliminate problems of making canals, ditches, dykes, or installing water pumps for regulating water to nourish their crops.

The latter is more or less the same as the former type but its members have insufficient financial power to invest in those irrigation facilities and some are in debt. To this group of people, the government provides both long term and short term credit to pay their old debts and for investment in land improvements. In many cases, if large investments are required such as in making reservoirs, the government provides free capital investment for such necessary construction to both groups. An account of 120 reservoirs with a total water storage capacity of approximately 209,000,000 m^3 was indicated in Northeastern Thailand in 1959. 9/

9/ Government of Thailand: Agriculture in Thailand, Ministry of Agriculture, Bangkok, Thailand, 1961, p. 154.

By the end of 1963, there were 83 cooperative land improvement societies with 10,232 family members covering an area of 272,986 rai. Of this amount, there were 79 societies of pure land improvement with 9,170 family members in an area of 247,617 rai and 4 cooperative credit and land improvement societies with 1,062 family members in an area of 25,369 rai. 10/ According to the 6-year development target, an estimated area of 354,000 rai in Northern, Central, and Northeastern Thailand will be brought into the administration of the latter type project.

A project of this type seems to be plausible in achieving the need of increased production per unit area since its objectives are to encourage scientific and intensive farming among farmers, and to provide farmers the credit for farming. This project should have received first priority in consideration for expansion. An emphasis in this project should rest on agricultural advice. Generally speaking, the administration of land cooperative projects has weak agricultural advice. A close coordination with the Department of Agriculture, therefore, may provide those members suitable information for farming. An additional division of an agricultural extension service within the Department of Land Cooperatives may be unwise since it would need an extra expenditure.

10/ Government of Thailand: Cooperative Statistics 1963, Department of Land Cooperatives, Ministry of National Development, Bangkok, Thailand.

Projects of the Department of Forestry

In striving to fulfill the national development goals, the Department of Forestry is one among the others which have launched various programs under the 6-year development plan. The approved programs of the Department of Forestry which are underway are (1) Forest improvement and reforestation, (2) research in silviculture and watershed management, (3) forest reservation, (4) forest protection, (5) forest inventory, (6) forest working plans, (7) botanical and zoological survey, (8) forest product research, and (9) lac farm-development.

Our attention here will focus on the forest reservation and research in watershed management because these two projects are concerned directly with the land utilization and development of the country.

A. Forest Reservation Project

The objective of this project is to conserve valuable forest lands which are of vital importance to the economy of the country. The target of reserving about 50 percent of the area of the whole country or about 270,000 square kilometers had been recommended by an FAO expert who made a survey of the forest situation of Thailand in 1940 and the recommendation was endorsed by the Ministry of Agriculture. Under this project, lands unsuitable for other uses are to be guarded against damage or destruction by men, animal, insect, fire, and other natural causes. This is Reserved Forest. Part of the Reserved Forest will be set aside for Protective Forest which is to be kept strictly regardless of the direct utility of the major and minor products available. Protective Forest is

reserved for the purpose of soil conservation, watershed protection or protection from damage by such natural phenomena as storm, erosion, and flood. Some part of the Protective Forest will be formed into National Parks.

Up to the end of 1961, 37,500 square kilometers or 23,437,500 rai of forest areas had been reserved. Of this number, 4,500 square kilometers or 2,812,500 rai had been constituted as Reserved Forest, whilst 33,000 square kilometers or 20,625,000 rai had been declared as Protective Forest. According to the 6-year development plan the progress of forest reservation, survey, and demarcation of 12,500 square kilometers or 7,812,500 rai of valuable forest is expected annually. 11/ Part of the Protective Forest areas has been set aside for establishment of 7 National Parks. The 7 National Park projects are getting underway in the provinces of Chiengmai, Pitsnulok, Petchboon, Nakornnayok, Prachinburi, Saraburi, Nakornrachasima, Loei, Kanburi, Sakonnakorn, and Prajuabkirikan. It is expected that at the end of 1966 after the completion of National Park projects, these areas will provide recreation for approximately 100,000 people annually. 12/

Even though 37,500 square kilometers have been declared as Reserved Forest and Protective Forest, an encroachment is still found on these areas. The Ministry of Interior is apparently not fully aware of the

---

11/ Government of Thailand: Agriculture in Thailand, Ministry of Agriculture, Bangkok, Thailand, 1961, p.198.

12/ 1961-1966 Target No. 9 of the Department of Forestry, Ministry of Agriculture, Bangkok, Thailand, p.4.

dangers of erosive practices and watershed protection, and district staff does not take strong disciplinary action against offenders. There are only 224 forest rangers to supervise these reserves and they have no means of transport.

The maximum penalty for unauthorized encroachment on public domain is a fine of 500 baht, but relatively few offenders who are brought to the court are fined more than a few baht, which is no deterrent. This leniency often derives from sympathy with those cultivators who have no immediate alternative way of making a living. To put a strong action against offenders, the penalty should include imprisonment, as well as a fine. The prevention of encroachment has been made more difficult by the intrusion of political influence, and the forestry officers in charge of the project appear unenergetic under this situation. This suggests a pessimistic outlook for forest reservation in the future.

B. Research in Watershed Management

The purposes of this project are to study the rate of erosion, run-off, and precipitation which will provide guidance for the future management of watershed areas. The work is being carried on by the Division of Silviculture in 4 localities namely, Doi Tung Forest in Chiengmai, MeChan Forest in Lampang, Doi Chieng Dow in Chiengmai, and Phu Kadung in Loei. These localities are catchment areas of many important rivers of the North and North-East. An effective protection of these areas will assist substantially in soil and water conservation and in agriculture in the plain down below.

Project of the Department of Irrigation

In an attempt to overcome the problems of supply water to the farm land, water conservation, drainage, and flood protection, the four main projects of the Department of Irrigation have been submitted as a part of the 6-year plan. Part of this work has been started and completed before the plan began in late 1961. Under the 6-year plan, the World Bank and foreign Governments have generously provided both loans and technical assistance sufficiently for undertaking the overall development plan. New schemes for irrigation, conservation, drainage, and flood protection have been added and are getting underway in most parts of the country. The four main work plans of the Department of Irrigation are:

A. State Irrigation Projects

The purpose of State Irrigation projects are to overcome the problems of irrigation, conservation, drainage, and flood protection for better agricultural enterprises. In order to direct these policies toward that end, sometimes a canal, ditch or dyke, lock or stuice, barrage, or dam is needed to combat the natural barriers. In many places, the requirements for withstanding the natural barriers are needed urgently. These activities require advanced techniques and large amounts of capital investment which the local people are unable to do by themselves. Under these conditions, the government will manage and maintain these activities without requesting any aid from local people.

By the end of 1959, there were 24 projects of this type already completed in the whole country providing sufficent water for farm land of 4,995,400 rai (Table VII). Under the 6-year development plan, 12 State

Irrigation projects are getting underway to cover new farm areas of 8,778,100 rai (Table VIII).

Our attention here will focus on the two big State Irrigation projects; Chao Phya Yai and Yanhee multipurpose projects.

a. Chao Phya Yai Project

The purpose of Chao Phya Yai project is to regulate the surplus water which overflows farm lands in the central plain during the flood season and which is used to nourish crop fields during the northeast monsoon season; November-February and pre-monsoon season; March-April. During these two seasons, water for use on farm land in the central plain is scarce. In a year of heavy rainfall, the high level of water during flood season causes damage to the crops grown in this region. It is, therefore, of great urgency to build a dam on the river in the upper part of the country for storing water to prevent flooding during the flood season and to use on farm land during the dry season. The multipurpose dam under the 6-year plan is under construction on Ping River at Yanhee Village in Tak province in the north creating a reservoir in the upper part of the river.

In distributing water from the reservoir to the lower farm lands in the central plain, a barrage was built on Chao Phya River at Chainat. The water flowing down from the upper reservoir is lifted by the barrage and then flows down into the distribution canals to feed various projects in the lower part (Figure II). Chao Phya project includes several projects indicated in Figure II covering a wide area of approximately 5,078,000 rai in the central plain.

TABLE VII -- THAILAND: Areas under water control of State Irrigation Projects, 1959

Scheme	Type of Water Control System a/	Area (rai)
Northern Region		
1. Me Faek	I	70,000
2. Me Ping Gao	I	44,900
3. Me Wang	I	77,000
4. Bha Tak	I	56,000
		247,000
Central Region		
1. Subhan	I,D,F	674,000
2. Nakorn Nayok	I,D,F	574,000
3. South Pasak	I,D	680,000
4. Bhasi Chareon-Dumneon Saduak	C	137,000
5. Chiangrak Noi-Klong Darn	F,D,C	1,335,000
6. Petchaburi	I,F	140,000
7. Me Khong	C,F	390,000
8. Prachin (Ta Hae)	C,F	60,000
9. Bankai	I	30,000
10. Wang Kra Jae	C,F	10,000
		4,030,000
Northeastern Region		
1. Lam Takong	I,F	100,000
2. Tung Samridhi	I,F	153,000
3. Huey Saneng	I	46,000
4. Tung Sang Badal	F	180,000
5. Ban Toom-Ban Tiew	F	29,000
6. Huey Luang	I	40,000
7. Me Khong Valley (Nong Kai)	F	63,000
8. Huey Nam Marn	I	5,500
		617,000
Southern Region		
1. Pur Snor (Pattani)	D,F	50,000
2. Na Tom (Patalung)	I	10,000
		60,000
	GRAND TOTAL	4,995,400

a/ I = Irrigation, C = Conservation, D = Drainage, and F= Flood Protection.

Source: Agriculture in Thailand, Ministry of Agriculture, Bangkok, Thailand, 1961.

TABLE VIII -- THAILAND: Areas under new State Irrigation Projects which are getting underway, 1961-1966

Scheme	Type of Water Control System a/	Area (rai)
Northern Region		
1. Me Lao	I	166,400
2. Me yom	I	230,000
3. Me Tang	I	153,000
		549,400
Central Region		
1. Tung Tawantok	C,F	812,000
2. Chao Phraya (New Area)	I,F	3,394,000
3. Me Klong (Extension)	I,F	2,300,000
4. Tak-Kamphangbhet	I,F	1,500,000
		8,006,000
Northeastern Region		
1. Huey Pra Hang	I	40,000
		40,000
Southern Region		
1. Kui (Pra Chuab)	I	22,700
2. Sao Tong (Nakorn)	I	70,000
3. Dhe Pha (Singora-Pattani)	I	70,000
4. Phya Hong (Patalung)	I	20,000
		182,700
GRAND TOTAL		8,778,100

a/ I = Irrigation, C = Conservation, D= Drainage, and F = Flood Protection.

Source: The same as Table VII.

MAP SHOWING CHAO PHYA YAI PROJECT

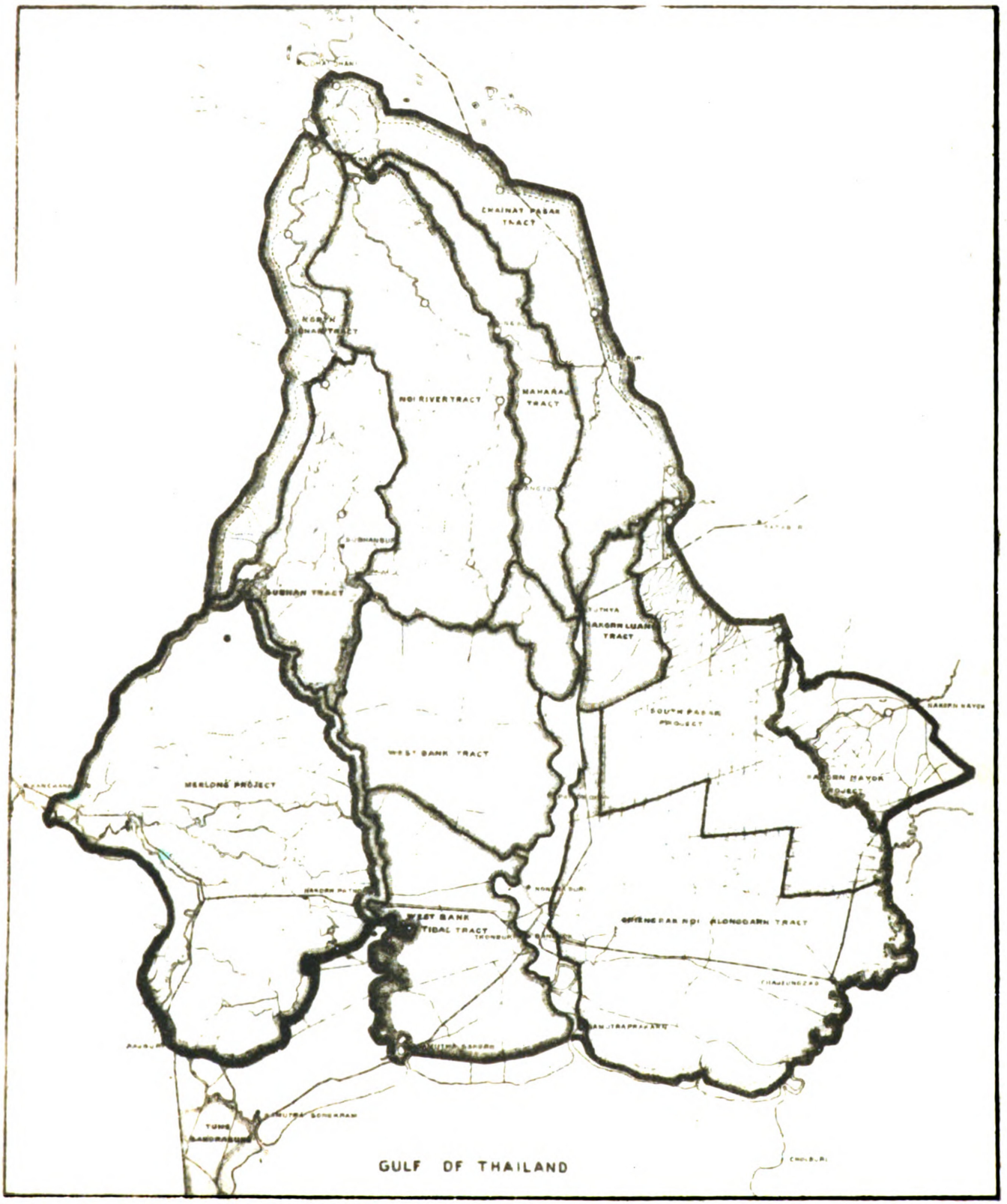


Figure 2

b. Yanhee Multipurpose Dam

The primary purpose of this project is to produce hydroelectric power for use in the most heavily populated provinces, which are thirty-nine in number including Bangkok and Tonburi. Existing power production facilities are of a very small magnitude compared with the apparent demand for power. Economic growth and development are hampered by the lack of a dependable and reasonably priced supply of electric energy. Although the primary purpose of the project is production of power, the dam and reservoir can also provide flood control and serve irrigation and navigation purposes. 13/

The Yanhee Dam is situated on the Ping River about 65 kilometers upstream from Tak or approximately 420 kilometers north of Bangkok. The construction work was started in 1957 using the loans granted by the International Bank for Reconstruction and Development.

The agricultural benefits of Yanhee project are many. It is estimated that the water in the reservoir can help solve the problems of irrigation and flood protection in an area of 1,500,000 rai of Tak-Kamphangbhet scheme. The project also provides flood protection to the area of 5,078,000 rai in Chao Phya Yai project. Of this amount, it is estimated that the water from the reservoir will be sufficient to irrigate 2,300,000 rai of land in Chao Phya Yai project on which other crops can be grown during pre-monsoon and northeast monsoon seasons.

13/ Government of Thailand: Agriculture in Thailand, Ministry of Agriculture, Bangkok, Thailand, 1961, p. 159.

B. People Projects

The purposes of this projects are to overcome the water problems in a small area in which advanced techniques and large funds are not required. In some areas, people lack drinking water and sometimes need small ditches or dykes for draining or controlling water on their farm lands. The local people can afford these facilities by pooling local labor under the supervision of the government technicians. In case such valuable materials as brick, cement, or stake cannot be acquired in the local area, the government provides the local people the funds for getting these materials. Under the project the government helps the people to design the model and work plan of the work. Ten million baht are provided by the government each year for helping local people.

By the end of 1961, there was an irrigated area of 1,907,050 rai which has been helped under this project. 14/ Of this number, 10,800 rai were in the Northern region, 17,500 rai were in the Northwestern region, 1,569,550 rai in the Central region, and 309,200 rai in the Southern region. The area under this project is expected to be increased every year according to the needs of the locality.

14/ Government of Thailand: Agricultural Statistics of Thailand 1961, Ministry of Agriculture, Bangkok, Thailand, p. 146.

C. Tank Irrigation Projects

The primary purposes of tank irrigation or reservoirs are for supplemental irrigation and to provide extensive additional benefits in the form of water for domestic use for livestock, for fish breeding and for recreation.

By the end of 1961, a total of 120 such reservoirs had been constructed with a total capacity of approximately 209,000,000 m^3., sufficient to furnish supplemental irrigation to an area of 255,318 rai. The program may be said to be political as well as economic, and in its implementation, emphasis has been placed on reaching as many people and as many communities as practicable. So far, reservoirs have been constructed in 64 of the 102 districts in the Northeastern region. Approximately 50,000 families are receiving some direct benefits from the reservoirs.

Under the 6-year development plan, the construction of six more reservoirs is getting underway.

D. Pumping Irrigation Projects in Emergency Aid

A project of this type is designed for helping the farmers in an area where water is insufficient, usually in the beginning of planting season. The project provides farmers sufficient water for their crops by using pumping machines. The project does not emphasize any particular area. The local people can request emergency aid from this project as a result of unusual natural phenomena.

An area of 332,760 rai of farm land was helped under this project in 1961 (Table IX). This amount was composed of 317,120 rai of paddy fields and 15,540 rai of gardens.

TABLE IX -- Thailand: Area under pumping irrigation in emergency aid, 1961

Region	Paddy Field	Garden	Total
Northern	1,420	--	1,420
Northeastern	16,850	--	16,850
Central	260,680	15,540	276,220
Southern	38,270	--	38,270
TOTAL	317,120	15,540	332,760

Source: Agricultural Statistics of Thailand 1961,
Ministry of Agriculture,
Bangkok, Thailand

Among the four types of irrigation projects discussed above, the State Irrigation projects seem progressive and many steps ahead. The absence of agricultural advice and information on water use in these projects is the major shortcoming and this may be so serious that many farmers are left far behind in agricultural technology. Uninformed peasants in these areas still farm in their own primitive way by waiting until the rain comes down. Sometimes they demolish existing irrigation facilities, such as canals, ditches, dykes, and so forth. Much more emphasis should be placed on basic information for these people.

Even though the People project can eliminate water problems in a small area, it is one of the cheapest projects which could have been utilized by such a poor country as Thailand. The point is that on State Irrigation projects there is a great deal of "overhead" expense, and perhaps "leaks" so that only a small proportion of the total baht expended is received at the local level. For local needs, the provision of 10 million baht each year for administration of this project is relatively low cost. What people have done for themselves they tend to value more and care for better. This is exactly the type of irrigation construction being done under the People projects. The provision for this project, therefore, should have authorized much more than 10 million baht each year.

CONCLUSION

It is difficult to evaluate Thailand's land development because the national land development goals are so vague and so far-reaching. Undoubtedly, the results of various programs being conducted toward this end have fulfilled some part of the national land development objectives. As it has been revealed so far, it is impossible to fulfill the national land development objectives within the period of the first development plan, 1961-1966. Although many programs have been launched under the plan, they have missed such very important objectives as the increase of productivity of farm lands, extending credit for farming, and ending improper land use. Cooperative Land Improvement projects and the projects under the Department of Irrigation seem to be interested in increasing production per unit area by supplying irrigation water and by encouraging scientific and intensive farming, but the lack of agricultural advice and advice on water use have kept farmers in about the same position as before.

The Department of Public Welfare and the Department of Land Cooperatives have also provided agricultural credit to their settlers and members, but the credit provided by the Department of Public Welfare is unproductive credit. The credit provided under the two Departments meets the needs of only a minority of farmers, leaving the majority of the

farmers outside these two communities without sufficient agricultural credit. The total counterpart fund of one million dollars or twenty million baht provided by the Thai and U. S. Governments for launching agricultural credit in the beginning of the 6-year plan is still untouched.

As long as the study of physical characteristics of land and land classification in the country is not yet completed, what we know about the land and its capabilities is vague. This makes it difficult to end improper land use. It is true that the provision of land ownership can lay down a good socio-political groundwork and can help solve the problem of shifting cultivation. Also, landownership can bring idle land into production which will result in an increase in total production.

We should, perhaps, ask ourselves here who should receive land. Should it go to those who earn their living by shifting cultivation and who thus destroy valuable natural resources? Giving those people landownership might reduce such practices while giving it to the pensioners, tricycle paddlers, vagrants, petty tradesmen, trespassers, and/or ones who have permanent employment in Government services would seem to have questionable merit.

The objective of national forest reservation is set at 270,000 square kilometers. At the end of 1966, it is anticipated that 112,500 square kilometers of forest will be brought to constitute a Reserve Forest and Protective Forest. This amount is only 42 percent of that required in the national forest reservation. An unauthorized encroachment on public forests suggests a pessimistic outlook for forest reservation in the future.

Recommendations

The 6-year development plan; 1961-1966, is an endeavor of the Government in the first step toward economic development. What we have learned to date in this plan can be used to imporve the second step. Existing mechanisms are already available. What we need is to make those mechanisms more efficient measures and to continue to work toward the goals.

The success of land development depends largely on the definite goals and appropriate measures directed toward those goals. And, these measures need to be soundly based where planning and direction are guided by competent technical advice rather than political influences.

In the study of land development in Thailand, there are several aspects which call for immediate improvement such as:

Legislation

The ceiling on peasant holdings and the limitation on the acquisition of landownership among the aliens under the Land Code of 1954 and the limitation of not more than three years in leasing arrangements of landed property should have been amended to give a wider opportunity for farmers and those foreign entrepreneurs and managers. Such limitations

hamper land development and foreign investment in the country. The provision under the Land Code of 1954 should provide a flexible amount of land to the farmers and the entrepreneurs and managers according to their agricultural or industrial enterprises actual need. In providing land for farmers, the Land Allocation Commission must think in terms of the labor, capital and managerial ability they have while the provision for foreign entrepreneurs and managers should have been considered in light of the actual needs of their industrial enterprises.

To act strongly against unauthorized encroachment of offenders on public domain especially national forest, the penalty should include imprisonment as well as a fine. Especially, a fine should be flexible according to the deed of the offenders rather than the maximum of 500 baht.

Administration and Organization

In Thailand too many Departments are trying to do the same thing. In general, dispersal of functions leads to a duplication of staff and higher expense. It also tends to breed "empire building" rather than getting on with the job. Much attention should have been put on good organization and administration which requires that when a particular function needs to be performed, a specific government unit be made responsible for it.

Both the Department of Public Welfare and the Department of Land Cooperatives have elaborate land settlement schemes. Tanks or reservoirs were built by the Department of Irrigation, but the construction of canals was left to the Department of Land Cooperatives. Since the latter lacked the engineering competence to do the job, it was not done. The entire land settlement project under the administration of the Department of Public Welfare should have been transferred to the jurisdiction of the Department of Land Cooperatives because of its long experience and its well established plans. The cost to the Government of land provided through the Department of Land Cooperatives is less than that provided through the Department of Public Welfare. The reason is that in the former Department settlers pay a part of the cost of the land, while in the latter, land is provided free.

Construction work under the Department of Land Cooperatives must be removed to the Department of Irrigation which has sufficient engineering competence, leaving the functions of guidance and advice about irrigation and maintenance to the Department of Land Cooperatives.

The programs of the Department of Land, the Department of Public Welfare, the Department of Land Cooperatives, and the Department of Irrigation should aim at the encouragement of scientific and intensive farming as well as the promotion of landownership, bringing idle land into production, preventing shifting cultivation, and providing irrigation water or flood control. By any means, agricultural advice and advice on water use should be provided widely in those projects. Possibly, coordination with the Ministry of Agriculture might help solve the problem without any new extra expenses.

Much emphasis in the Land Settlement project should be concerned with choosing the right place, choosing the right settlers, physical preparation of the site before the settlers arrive, kinds of credit provided, and the amount of rai per settler. Especially, the amount of rai per settler must be based on the two criteria, standard of living of the settler and cultivating ability of each family. The former can be calculated by comparing the level of income per year of the settler to the lowest income per year of the government employee.

The latter can be figured out by consideration of the labor and capital the settler has.

Policy in the Future

A brief look at land development in Thailand reveals a wide panorama of land problems in the future. It is the policy of the government to reserve an area of at least 50 percent of the total area of the country as permanent forest. This suggests a limited supply of arable land in the future.

Even though land in the modern economy has dwindled in its importance, man is still tied directly to land. Land provides us with space for living, with food from its productivity, and with other characteristics that we can use to satisfy our wants. Generally, the land problem at hand arises from the feeling of the limitation of arable land and the increase in demand on land resulting from the increase of population and the improvements of level of living such as better food, better housing, and so on. With the reduction in the death rate, Thailand's population has increased rapidly. This increase calls for a certain amount of land to be brought into production of goods and services such as food, fibers, materials, roads, schools, and so forth. The problem at present is what government land policy should be directed toward in the future.

The present land development policies under the 6-year plan of Thailand have missed an important aspect of how much land will be required in the production process in the future. Although much land in Thailand could be brought into production at the present so that a downward adjustment in the demand for land is unnecessary, it is still important to focus on land requirements in the future which may arise from increases in population and improvements in the level of living. This calls for the study of future demand for land.

Our problem is not ended with the study of future land requirements. It is also useful to think in terms of present land uses which might have some benefits for coming generations. In Thailand, animals and fish have been harvested without thinking of future productivity. Primitive ways of cultivation have taken from the land without providing for maintenance or improvement of the productivity of farm land.

The last aspect which the Government should pay much more attention to in the future is the problem of land fragmentation. In 1953, there were about 300,000 farmers, or approximately 15 percent of the total farmers, with holdings of less than 6 rai or 2.4 acres, and almost 600,000 farmers, or about 27 percent of the total farmers, had size holdings between 6 to 15 rai or 2.4 to 6 acres. This condition suggests a dilemma of land

fragmentation in the future because of the law of descent and inheritance which divides the property among the heirs. While the problem of land fragmentation is not yet serious in Thailand at present, it might become serious in coming generations. Thus, it is appropriate for the Government to start today to (1) study the future demand for land, (2) study the conservation of land, and (3) study the problem of land fragmentation that might occur in the future.

BIBLIOGRAPHY

Ingram, James C. Economic Change in Thailand Since 1850. (Institution of Public Relations) Stanford University Press Stanford, California - 1955

Jacoby, Erich H. Agrarian Unrest in Southeast Asis. Asia Publishing House New York, 1961

International Bank for Reconstruction and Development. A Public Development Program for Thailand. (Report of IBRD Mission organized at request of Thailand) John Hopkins Press Baltimore, 1959

Coochart,C. Agricultural Economics of Thailand. Kasetsart University, Bangkok, Thailand, 1960.

National Economic Development Board. National Economic Development Plan; 1961-1966. Ministry of National Development, Bangkok, Thailand, 1960.

Wichailak,S. Land Code of 1954. Nitiwech Press, Napralarn Road, Bangkok, Thailand, 1960.

Government of Thailand. Land Utilization of Thailand, 1959. (Division of Agricultural Economics, Ministry of Agriculture) Bangkok, Thailand, 1961.

Suwannaset, J. Land Classification. (Department of Land Development) Bangkok, Thailand, 1963.

Wichailak, S. Land Accommodation Act of 1942. Nitiwech Press, Napralarn Road, Bangkok, Thailand, 1953.

Wiriyanon, M. Land Cooperative in Thailand. (Department of Land Cooperative, Ministry of National Development). Bangkok, Thailand, 1964.

Jangprai, C., Moncharean L., and Banichpong S. Land Classification. Tamnearpnayok Press, Samsen Road, Bangkok, Thailand, 1964.

Nuttonson, M. Y. The Physical Environment and Agriculture of Thailand. American Institute of Crop Ecology, Washington, D. C. - 1963.

Government of Thailand. Land Settlement. (Department of Public Welfare, Ministry of Interior) Bangkok, Thailand, 1959.

Government of Thailand. Agricultural Statistics of Thailand, 1961. (Division of Agricultural Economics, Ministry of Agriculture), Bangkok, Thailand.

United States Operation Mission to Thailand. Thailand Past and Present. Thai Watana Panich, Rama I Rd., Bangkok, Thailand, 1959.

Government of Thailand. Land Settlement in Social and Economic Development. (Department of Public Welfare, Ministry of Interior). Bangkok, Thailand, 1959.

Syamananda, R. An Outline of Thai History. Chulalongkorn University, Bangkok, Thailand, 1963.

Government of Thailand. Agriculture in Thailand. Ministry of Agriculture, Bangkok, Thailand, 1961.

Government of Thailand. Land Classification. (Department of Land Development, Ministry of National Development). Bangkok, Thailand, 1960.

U. S. Department of Agriculture. Agricultural Diversification and Economic Development in Thailand. Foreign Agricultural Economic Report No. 8, Economic Research Service, Regional Analysis Division, Washington, D. C., 1963.

Government of Thailand. Present Conditions of Agricultural Cooperation in Thailand. Ministry of Cooperatives. Bangkok, Thailand, 1962.

Wood, W. A. R. A History of Siam. The Siam Barnakich Press, New Road, Sikak Phya Sri, Bangkok, Thailand, 1933.

Government of Thailand. Land Classification Project and Target. (Division of Land Classification, Department of Land Development, Ministry of National Development), Bangkok, Thailand, 1964.

Government of Thailand. Assessed Land Value and Land Tax. (Revenue Department, Ministry of Finance) Bangkok, Thailand, 1963.

Government of Thailand. Cooperative Statistics, 1963. Ministry of National Development, Bangkok, Thailand, 1963.

Government of Thailand. Target of Land Cooperative Department. Ministry of National Development, Bangkok, Thailand, 1963.

Wiriyanon, M. Land Cooperative Organization. The Department of Land Cooperative, Ministry of National Development, Bangkok, Thailand, 1964.

Government of Thailand. Economic and Financial Situation. National Economic Development Board, Ministry of National Development, Bangkok, Thailand, 1963.

Government of Thailand. Projects and Targets of the Department of Forestry. Department of Forestry, Ministry of Agriculture, Bangkok, Thailand, 1960.

Government of Thailand. Projects of the Department of Land, Department of Land, Ministry of Interior, Bangkok, Thailand, 1960.