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SIAM

2nd. RURAL ECONOMIC SURVEY
1934—1935.

By

JAMES M. ANDREWS, A. B., M. A.

Associate in Anthropology

Peabody Museum

Harvard University.

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Errata.

First Page of Preface—last para—For 'Nitidhana' read 'Nitidhada'

Page 19. Sixth line of Foot-note ⁽¹⁾ for 'In' read 'It'

Page 357. Foot-note No. 7 for 'commodity' read 'community'.

Page 357. Foot-note No. 10 for 'commodities' read 'community'.

PREFACE.

The present report deals with factual information on economic conditions in rural Siam. The data were obtained by the Second Rural Economic Survey from the country people of the Kingdom, and concern transactions in cash and commodities during the year B. E. 2476,—from 1 April 1933 to 31 March 1934. The Survey was performed under the joint auspices of the Siamese Government and Harvard University.⁽¹⁾

The highest appreciation must be expressed for the assistance and cooperation granted the Survey by governmental Ministries and officials. Nothing which was needful to the success of the Survey was neglected, and that this was the case is due primarily to the interest and efforts of H. S. H. Prince Sakol Varnakara Varavarna, Adviser to the Ministry of Interior; of H. S. H. Prince Vimvaditya Rabibadhana, Under-Secretary of State for the Ministry of Economic Affairs; and of Luang Dej Sahakorn, acting Under-Secretary of State for the Ministry of Agriculture. These three high officials of the Siamese Government were intimately associated with all plans made for the Survey, with the detailed prosecution of research in the field, and with the final interpretation of the data acquired. Whatever success the Survey may be deemed to have had is due chiefly to their whole-hearted interest and cooperation.

Preliminary arrangements for the Survey were carried out by correspondence between the following members of His Majesty's Government:

H. E. Phya Manopakorn Nitidhana, former President of the State Council,

(1) The First Rural Economic Survey was performed in 1931 under the auspices of the Siamese Government and the International Council of Missions, and under the direction of Professor Carle C. Zimmerman. The reader is referred to the published report of this Survey,—“*Siam: Rural Economic Survey*” by Professor Carle C. Zimmerman, Bangkok Times Press, Bangkok, 1931.

H. E. Col. Phya Bahol Balavayuha Sena, President of the
State Council,

The State Council, and

H. E. Phya Komarakul Montri, former Minister of Economic
Affairs

and the following faculty members of Harvard University :

Prof. James Bryant Conant, President of the University,

Prof. Alfred M. Tozzer, Chairman of the Division of
Anthropology,

Prof. Roland B. Dixon,

Prof. Earnest A. Hooton, and

Prof. Carle C. Zimmerman.

It was decided by this correspondence that an investigator should be sent to Siam from Harvard University to undertake research in economic and allied fields for the Siamese Government, and to undertake research in anthropology for Harvard University.

Shortly after the arrival of the investigator in Siam a Committee⁽¹⁾ was convened by the Ministry of Economic Affairs to discuss the aims of the Survey and to plan the methods by which they might be realized. It was decided that the Survey Party⁽²⁾ should consist of young governmental officials to be loaned by various Ministries and Departments for the period of the Survey work, and that the work of the Survey should fall under three general headings,—economic, medical, and anthropometric.

The men appointed to the Survey under the official leadership of Mom Dhavivongse Dhavalayasakdi and Dr. Phra Jan Vitivedt devoted unflagging interest and energy to the task before them and succeeded in gathering the following factual information :

Economic: Detailed accounts of the incomes, expenditures, and inventories of over one thousand seven hundred rural Siamese households in forty villages of the agricultural districts of Siam.

Medical: Diagnoses and brief case histories of the members of over one thousand seven hundred rural Siamese families, and of an additional large number of school children.

(1) For the membership of this Committee see Appendix A.

(2) For the membership of the Survey Party see Appendix B.

Anthropometric: Complete measurements and morphological observations on over four thousand adult male individuals including Thai, Lao, Siamese Khmer, and Siamese Mohn.

Agricultural: Soil samples for chemical and bacteriological analysis from most of the important agricultural districts of North-east, North, and South Siam.

A preliminary analysis of the economic data is presented in this report. The medical data will be made the basis of a separate report to the Ministry of Interior. A report on the anthropological data will be prepared in the statistical laboratories of Harvard University. Soil samples have been chemically analyzed by the Bureau of Agricultural Science, and will be bacteriologically analyzed in the laboratories of Massachusetts Agricultural College. The Government laboratories have analyzed dietary samples. Further analysis of the economic data will be undertaken in the statistical laboratories of Harvard University.

Invaluable assistance was given in the tabulation of economic anthropometric and medical data was given by Nai Thavi Raengkam: tabulation of the economic data was facilitated by the assistance of H. S. H. Prince Adhibarabongse Kashemsri of the Bureau of General Statistics.

Constant assistance in the preparation of the present report was given by Nai Rabil Bunnag.

It must finally be stated that the economic report as a whole owes more to the constant assistance and suggestions of Prof. Carle C. Zimmerman than to any other single individual. Without his pioneer work in this type of enquiry in Siam, and the experience gained from the First Rural Economic Survey, the present Survey would scarcely have been possible at all.

THE AUTHOR.

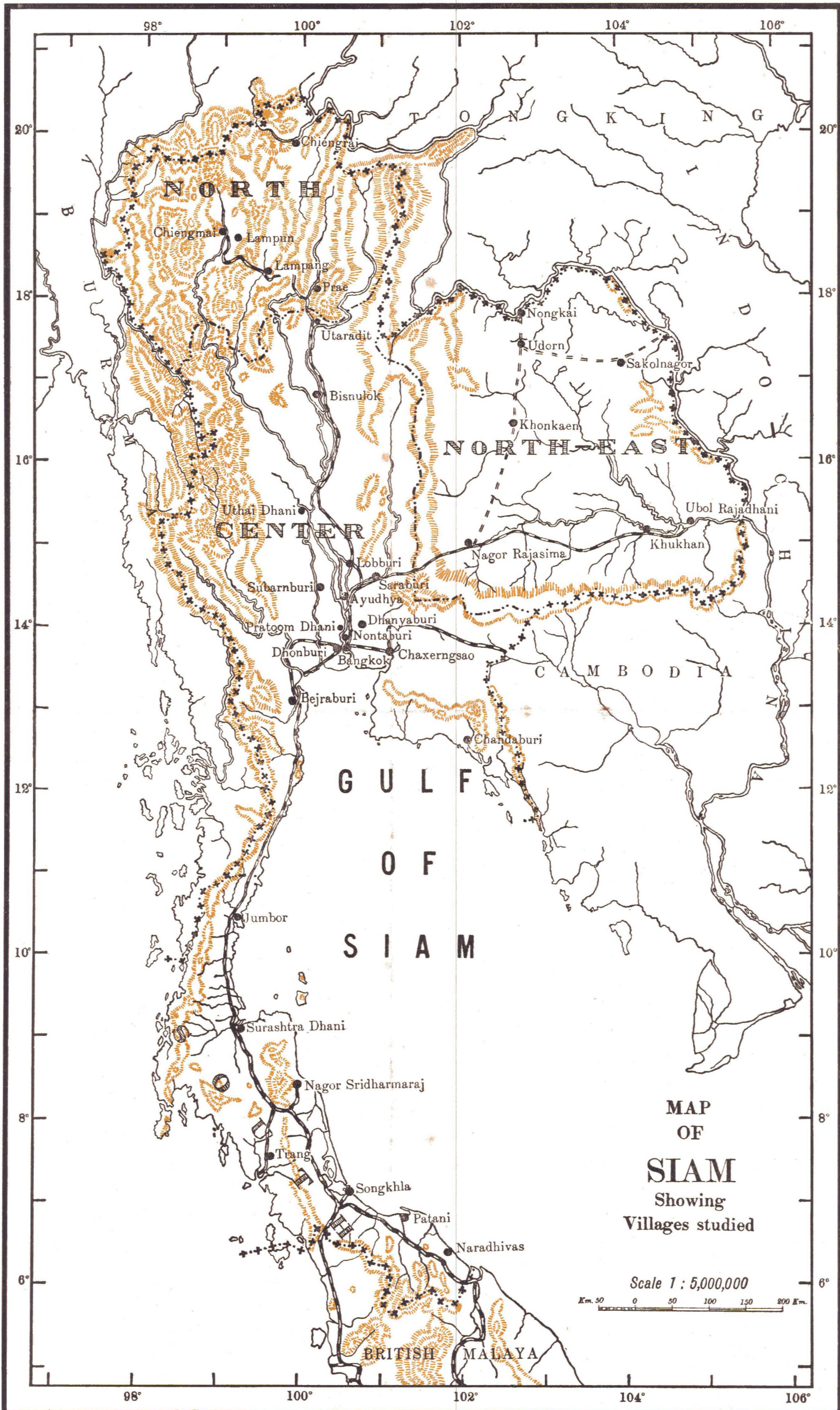
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MAP
OF
SIAM
Showing
Villages studied

Scale 1 : 5,000,000
Km. 50 0 50 100 150 200 Km.

CHAPTER I

INTRODUCTION.

Siam today is in the grip of a world wide financial depression unprecedented in its seriousness and its widespread effects. Due to the wealth of its natural food supply and the warmth of its climate the Kingdom has not felt the evil effects of the depression in anything like so marked a degree as nations which must depend on industry for income, on cash income for food, and on cash income for clothing and housing to protect their people from the rigours of cold climates. The fall in rice prices has, however, greatly diminished the cash incomes of the people; and has resulted in a considerable decline in government revenue.

Decreased incomes have not had any very serious effects on the country people. They grow their own food, make what little clothing they require, and construct their own houses with materials which can be obtained at little if any cost. The decline in government revenue has been much more serious, although a sound financial policy has made it possible for the government to keep its finances in enviably good order.⁽¹⁾ It has become necessary for the Kingdom to take stock of its economic condition and, since it depends for its revenue primarily on the produce and the tax returns of its country people, it is in rural Siam that there is most need for analysis and development.

There are many intelligent and patriotic Siamese who believe that the country people of the Kingdom will be happier if they are

(1) Revenue in B. E. 2469 was Baht 100.5 Millions (Actual).
2470 was Baht 117.4 Millions (Actual).
2471 was Baht 108.9 Millions (Actual).
2475 was Baht 79.6 Millions (Actual).
2476 was Baht 72.4 Millions (Budget
Estimate).

left in their present uncommercialized stage of development without the cares which are a part of all commercial expansion. It cannot be denied that, on philosophic grounds, there is much to be said for this point of view. All Siamese, however, wish their government to have the income which is necessary if it is to hold its place in the community of nations; and it is very clear that this income is to be achieved only by the expansion of commercial development in rural Siam. Also, fortunately or unfortunately, commercialization is the order of the world today and one may seriously doubt if it will be possible to prevent its progress in Siam. Japan, by its commercial development, has since the middle of the last century made itself one of the foremost nations of the world, and has given a great stimulus to commercialization in all parts of Asia. The stimulus has been felt in Siam and will doubtless be increasingly powerful in time to come. Commercialization seems inevitable in Siam, and no one can doubt that it is desirable for it to proceed from Siamese initiative.

In order to know how best Siamese initiative may be applied to the problem of economic improvement and commercial development it is necessary to have at hand definite information concerning the conditions which now obtain in all parts of the country. The Second Rural Economic Survey was sent into rural Siam with this purpose, and it has returned to Bangkok with factual data of great importance to the Kingdom. It is these data which form the substance of the present report.

THE NATURE OF THE DATA.

It was decided that the budgetary method of collecting information on cash incomes and expenditures,—as employed by the First Rural Economic Survey and as used by governmental research agencies in all parts of the world,—offered the best means of determining the economic conditions of the Siamese country people.

An attempt to obtain information of an economic nature by consultation with local officials has sometimes been made in Siam as in other countries. The advantage of such a survey is that it is easy to make: the disadvantages are that the information is never

exact and that data from one area cannot be compared with data from another area. Officials of one district may tell us that the local people are very poor and are unable to pay their taxes, while officials of another district far away may tell us exactly the same thing. It is quite impossible to determine from such statements whether or not conditions in the two districts are the same, whether or not they are due to the same factors, and how in each district they may best be remedied.

The assistance of the local officials is of great value to such a survey ~~has~~ that which has just been completed. Many of them are deeply and genuinely interested in the welfare of the people subject to their control, and they can often present at once a general view of a situation which is of great service. Since their information is not subject to comparative treatment it cannot be used as the basis of a serious economic report, but the cordial assistance and cooperation of local officials throughout the country has been of great value to the Survey and, in many cases, has made it possible to clarify the interpretation of factual data.

The information obtained by the Survey Party was secured by detailed and lengthy discussion with the heads of rural Siamese households in nearly all the important agricultural areas of the Kingdom. As in the case of the former Survey, the local officials of each district were requested before the arrival of the Survey Party to draw up a list of the householders in the villages selected for study. On its arrival in the village the Survey Party consulted this list and selected at random some forty-five or fifty families for study. The selected families were then called together, usually in the "sala" of the temple grounds, and forty which had been resident in the village for the entire year B. E. 2476 were definitely assigned to different members of the Survey Party for study.

The Party remained in each village for two days, and there were usually ten investigators at work with the economic questionnaire. From two to four hours were usually required to complete the work for each household.

The first step in each investigation was to determine the number and ages of all members of the household. After this, the

householder was questioned at length and in detail as to the source of all the food, clothing, and other items of expenditure which he had needed for his family during the previous year. All were carefully noted and, in the case of those items which he or his family had not produced for themselves, the amount paid in cash or the cash value of the amount paid in rice was recorded. These amounts were then added up, and the investigator was able to determine what the total expenditure of the household had been. The householder was not informed of this total, but was asked in detail about his various sources of income. These in turn were recorded, and a figure for total income was obtained. The investigator was then able to compare total income with total expenditure and, in this way, to judge of the accuracy with which he had obtained his data. Since an attempt had been made to include all sources of income and all causes of expenditure for the household as a whole, it was clear that the totals should balance. If they did not, the reasons for the discrepancy must be found. It was recognized that many figures could not be given with complete exactness, and if the discrepancy between income and expenditure was less than 5% of the income it was considered that no greater accuracy could be obtained.

Nearly seventeen hundred families were studied in this way and in an amazingly large number of cases the balance was found at the first attempt to be within 5% of the total income. When a significant discrepancy was found, the investigator scanned the figures which he had recorded and questioned the householder a second time about those which seemed, in view of general conditions, to be incorrect. It often happened that a householder had made a recognizably incorrect estimate of some of his expenditures if the investigator had asked him for his year's expense for a certain item instead of asking how much had been spent each week. In other cases the wife of the householder was able to correct estimates. As a final resort, the householder was told of the difficulty which existed in balancing his income and expenses and was requested to think back and attempt to uncover the cause of the discrepancy. In many cases he was finally able to do so and, if the reason seemed a likely one, it was accepted. If no reason could be given, or if the

investigator decided that the reason given him was unreliable, the questionnaire for that household was torn up and a new one started to take its place. In the entire Kingdom, only half a dozen questionnaires had to be discarded because of the obvious unreliability of the householder. One of these belonged to a man with two wives, and it was clear that he refused to give his true income in the hearing of his wives while each of them refused to give her true expenditure in the hearing of the other.

It was only to be expected that such cases should be found. The remarkable thing is that there were so few of them. The vast majority of the country people entered with some interest into the aims of the Survey and were plainly anxious to give as exact information as possible. They had been assured that all statements made by them would be treated in complete confidence, and they almost always accepted this assurance at its face value. They very frequently admitted evasions of taxes and illegal gambling, and they did not attempt to hide illegal liquor making and consumption of illicit liquors and drugs in the regions where the local officials knew that such operations were carried on. In such regions, of course, it was necessary to make it very clear that the local officials would not be given an opportunity to consult the information from individual households.

In the opinion of the members of the Survey Party, and in the opinion of all those who saw the frank reactions of the country people to the Survey, there can be little doubt that the data obtained on illegal incomes and expenditures are as substantially accurate as are all other.

THE VILLAGES STUDIED.

In order that the data of the 2477 Survey should be as closely comparable with those of the 2473 Survey as possible, it was decided that the investigations should be carried out in the same villages which are studied by the First Rural Economic Survey. A few changes were made but, as the following Table shows, most of the villages are those of the earlier survey. In view of the fact that the village names are not likely to be familiar to most readers of

this report they will be referred to in most cases by the provincial names. It is to be remembered that, although a community is referred to in this report, for instance, as "the Bangkok community" or "the Bangkok village", this does not mean that a study was carried out in Bangkok itself, but that a village near Bangkok was studied. The names in italics in the following Table are those by which the villages will be described in the course of this report.

NORTH-EAST SIAM.

VILLAGE	DISTRICT (Amphur)	PROVINCE (Changvad)
Ban Michai	Muang	<i>Nongkai</i>
Ban Lao	Mark Kheng	<i>Udorn</i>
Ban Praku	Phra Lap	<i>Khonkaen</i>
Ban Rua	Pu Vieng Wang Sapung	Khonkaen
Ban Srithan		Leui
Ngiew Don	Dhat Cherng Chum	<i>Sakolnagor</i>
Nong Khon	Muang	<i>Ubol</i>
Nong Krog	Srisakes	<i>Khukan</i>
Ban Mai	Muang	<i>Nagor Rajasima</i>

SOUTH SIAM.

VILLAGE	DISTRICT (Amphur)	PROVINCE (Changvad)
Lumpu	Bang Nara	<i>Naradhivas</i>
Pao Yudh	Sabarang	<i>Pattani</i>
Pavong	Muang	<i>Songkla</i>
Na Yong Tai	Tab Tieng	<i>Trang</i>
Tai Sampao	Muang	<i>Nagor Sridammaraj</i>
Wat Pradoo	Ban Don	<i>Surat</i>
Ta Yang	Ta Tapao	<i>Jumbor</i>

(1) By "the Pu Vieng village" in this report is meant the two villages of Ban Rua and Ban Srithan. Twenty families only were studied in each of these.

NORTH SIAM.

VILLAGE	DISTRICT (Amphur)	PROVINCE (Changvad)
<i>Chang Puak</i>	Muang	Chiengmai
<i>Mae Hiah</i>	Muang	Chiengmai
<i>San Mahaphon</i>	San Mahapon	Chiengmai
<i>Vieng Yong</i>	Muang	<i>Lampun</i>
<i>Na Kuam</i>	Muang	Lampang
<i>Ban Sadej</i>	Muang	Lampang
<i>San Sai</i>	Muang	<i>Chiengrai</i>
<i>Mae Kam</i>	<i>Chiengsen</i>	Chiengrai
<i>Pa Daeng</i>	Muang	Prae
<i>Mae Kami</i>	Rong Kwang	Prae
<i>Pun Vaen</i>	<i>Laplae</i>	Utaradit

CENTRAL SIAM.

VILLAGE	DISTRICT (Amphur)	PROVINCE (Changvad)
<i>Pra Kanong</i>	<i>Phra Kanong</i> (<i>Bangkok</i>)	<i>Pra Nagora</i>
<i>Bang Tanao Sri</i>	Nontaburi	<i>Nontaburi</i>
<i>Chook Krachoer</i>	Muang	<i>Chazergnsao</i>
<i>Lam Pakgood</i>	<i>Dhanyaburi</i>	Pratoom Dhani
<i>Hantra</i>	Krungkao	<i>Ayuthia</i>
<i>Talung</i>	Muang	<i>Lopburi</i>
<i>Ban Yang</i>	Saohai	<i>Saraburi</i>
<i>Pihandaeng</i>	Ta Piliang	<i>Supanburi</i>
<i>Nam Sum</i>	Nam Sum	<i>Uthai Dhani</i>
<i>Thong Chai</i>	Klong Krachaeng	<i>Bejraburi</i>
<i>Ta Tong</i>	Muang	<i>Pitsanulok</i>

SOUTH-EAST SIAM.

VILLAGE	DISTRICT (Amphur)	PROVINCE (Changvad)
<i>Khao Wua</i>	<i>Ta Mai</i>	Chantabun
<i>Klong Naraya</i>	Muang	Chantabun

In each of these villages, with three exceptions, forty households were studied. In the village near Bangkok one hundred and fifty six families were investigated, as it was considered to be desirable to have a larger sample from one district in order to discover whether or not the data would be greatly changed by a more intensive study. In two villages,—Ban Rua of Changvad Khonkaen and Ban Srithan of Changvad Lewi,—only twenty families were studied. These two villages lie in isolated districts of the hilly country between North-east Siam and North Siam. They are very much alike in their economy, and it was decided that it would be best to consider them as a single sample under the name *Pu Vieng*.

ADEQUACY OF THE SAMPLING IN THE MAJOR GEOGRAPHICAL AREAS.

For the purposes of the Survey it was decided that Siam should be considered as consisting of five major geographical areas.

North-east Siam is that part of the Kingdom which drains into the Mekong River. It is an open-forested level country with sandy or clayey soil. It was undoubtedly sea-bottom at some period not far back in the geological past. In the dry season it is sun-baked and very arid: in the wet season much of it is flooded. The temperature is considerably colder than that of Bangkok in winter, and considerably hotter in summer.

The North-east is inhabited, North of the Menam Moun, almost wholly by Lao people. South of the Menam Moun there are many Khmer villages and, throughout much of the central part of the area, there is a considerable population of mixed Lao and Khmer blood.

The population is dominantly self-sufficing and agricultural. Glutinous rice and other crops are grown for home-consumption: little agricultural or other produce is sold.

The villages selected for study within this area are probably representative. If anything, they are likely to be somewhat richer than large parts of the surrounding and less well settled countryside. Since the area is sparsely populated, there are many districts where communities are very small and farm families live rather far

apart. The villages selected for study by the Survey had to have at least forty households, and they had to be within a few hours journey of the nearest provincial centers. It is possible that incomes and expenditures of the total farming population of the North-east would average slightly less than the figures obtained by the Survey. It is equally true that still larger villages, less strictly agricultural in character, would give somewhat higher figures.

We may conclude that the data on farming, fishing, handicrafts, and the like, are very close to the true averages of the area. Data on total incomes, loans, and inventories probably give averages which are slightly too high.

North Siam is the country chiefly inhabited by Lao which lies North of somewhat wavy line through Raheng, Utaradit, and Pejabun. It does not include the valley of the Menam Sak. It is an area of many valleys which broaden out toward the South to merge with the flood plains of the Menam Chao Phya.

The population of the valleys, as already mentioned, is chiefly Lao and agricultural: the population of the hills includes a great variety of relatively little known tribes which are, probably chiefly of Burmese and South Chinese origin. The Survey made no attempt to study these hill people who occupy, probably, more than half of the geographic area of North Siam. The data, therefore, concern the agricultural Lao population only.

There are four main valleys of the North, and of these only two are open to easy communication by road. Mae Hawng Sawn in the drainage of the Salwin can be reached only by a three week journey on ponies from Chiengmai: it was not sampled by the Survey. The road to Nan is not yet finished, and the Survey Party was unable to get to Nan at the time when it was in the North. Both Mae Hawng Sawn and Nan are chiefly self-sufficing in their economy: the valleys with better communication have felt some stimulus toward commercialization.

The villages studied in the North are geographically well dispersed through the agricultural areas with the two exceptions mentioned above. The averages obtained from them, as in the North-east, are perhaps a little higher than a true average of the country-

side. In general, the data may be considered as very close to accuracy for the area as a whole.

South Siam consists of a narrow but high mountain chain and two narrow strips of land between the hills and the sea on both sides of the peninsula. A very heavy rainfall, carrying a wealth of minerals from the mountains to the lowlands, has made the area one of the most fertile in Siam. Tropical trees and fruits grow in abundance with a minimum of cultivation.

The population of the area, North of Pattani, is chiefly Thai: South of Pattani it is chiefly Malay. There is a considerable territory in which Malay and Thai villages are almost equally numerous.

The economy of the area is chiefly agriculture for home needs, and animal raising and fishing for sale. The villages studied by the Survey did not include any specific fishing communities and this is to be regretted.

The averages from the South certainly do not show the true importance of fishing in this area: they give, however, what is undoubtedly a fairly accurate picture of the agricultural population.

Central Siam is the area of the broad flood plains of the Menam Chao Phya South of Raheng and Utaradit. It is the rice producing area of Siam par excellence, and it has important fisheries along its coast.

Most of the area is fragmented by a complex of winding and ever changing rivers. Communication must be by boat. In the wet season nearly the whole area is flooded with the result that all houses have to be built on high piles: even the cattle have to sleep in pile dwellings during the wet season, and it is impossible to go even from one house to another without a canoe.

The villages selected for study by the Survey show a considerable range of economic development and probably give a fairly accurate picture of the most important agricultural people of the Kingdom. As in South Siam, the data do not show clearly the importance of the coastal fisheries as no true fishing villages were studied.

South-east Siam is the area South of the Menam Moun drainage which lies between Cambodia and the Gulf of Siam. It is

very much like Central Siam in general character, but it remains in a condition of uncommercialized agriculture.

The two villages studied by the Survey in the South-east do not give a true picture of the economy of this area. One is a highly specialized pepper-growing community, and the other is a fruit village lying at the base of the hills. The data from these villages are valuable because of the potential importance of the pepper industry, but they may not be considered as representative. It was for this reason that the present Survey decided not to include these two communities with those of the Center.

We may conclude that the sampling has, on the whole, been satisfactory. Within each village a careful attempt was made to obtain a truly random and representative group of families, and the communities selected in the four major areas of the Kingdom give a fair picture of the dominant occupations and degrees of development.

Because of the Survey's need to study villages which were within a few hours journey of the provincial centers, it is possible that the averages in each area are slightly higher than the true, but unascertainable, averages of the areas. This fact does not in any degree vitiate the value of comparisons between the areas, and we are justified in asserting that the divisional averages obtained give a true picture of the relative degrees of economic development in the different areas.

TERMS AND DEFINITIONS.

For an understanding of the data which are to be presented it is necessary to have a very clear conception of the terms and definitions employed in preparing them.

Income and expenditure include not only cash transactions but also all bartering or exchanges of goods. When a farmer explained that he had secured salt for his household by exchanging one standard basket of rice for two of the smaller baskets of salt, the investigator made a note of the transaction and it was treated as if the farmer had sold one standard basket of rice at the prevailing price and had bought salt for the same amount. Therefore, when we say that a farmer's income during the year amounted to Baht 20.00 we

do not mean necessarily that he handled that amount of money at all. It is possible that he exchanged rice worth Baht 20.00 for other goods and had no strictly cash income at all. This is the situation which we find very often in the self-sufficing areas which produce, in general, only enough rice for their own needs with a little in addition for bartering. This point has important implications which will be discussed in a later chapter of the report.

All income and all expenditures have been divided into three major categories,—“Annual”, “Capital”, and “Extraordinary”. By “Annual Income” or “Annual Expenditures” we mean, primarily, earnings which take place every year and expenditures which have to be made every year. Wages and salaries are the simplest form of annual income: sales of crops, sales of fish, and sales of homemade goods are more important in Siam. Costs of food and clothing are the most important “Annual Expenditures”;

“Capital” transactions are those which are not repeated every year and which involves investment in capital goods or liquidation of capital goods. Money borrowed and money loaned are capital transactions, but they will be treated separately in this report.

“Extraordinary” transactions are those which are not or need not be repeated annually, and which do not have the character of investments or liquidations. If a farmer makes a cash gift to a friend we cannot consider that the amount of the gift is an annual cost, and we cannot consider it as an investment. We solve the difficulty by considering it as an “Extraordinary Expenditure”, and the “Extraordinary” transactions will include all those sources of income or causes of expenditure which cannot be considered as either annual or capital in nature.

“Total” income and expenditure, finally, includes the total of annual, capital, and extraordinary transactions.

The Second Rural Economic Survey has approached the analysis of economic development in Siam by determining the incomes and expenditures of the country people according to these terms and definitions. The following outline of income and expenditure, which may be regarded as the budget of the average farmer of Central Siam in 2476, will make clear the classifications

used in the analysis. The figures in Roman numerals indicate the chapters in which discussion of the quantities involved will be found.

INCOME

Annual Income (Earnings) received from :

Crops (II)	105.47	
Fishing (III)	2.55	
Animals (IV)	1.85	
Land Rentals (V)	8.99	
Building Rentals (V)	2.44	
Handicrafts (VI)	34.09	
Labor (VII)	8.42	
Trading (VIII)	11.97	
Professions (IX)	1.26	
Government Pay etc. (IX)	2.59	
Interest on Loans (XV)	4.93	
All Other (IX)	0.00	
	<hr/>	
Total (XII)	184.56	184.56

Capital Income (Liquidation) from sale of :

Land (V)	14.20	
Buildings (V)	1.41	
Animals (IV)	9.51	
Gold and Silver (XIV)	10.53	
Other Capital Goods (XIV)	10.06	
	<hr/>	
Total (XIV)	45.71	45.71

Loan Reduction (Chiefly repayments received

on outstanding loans) (XV) 19.42

Debt Increase (Chiefly money borrowed) (XV) 37.72

Extraordinary Income (Chiefly gifts received,
gambling gains, etc.) (XIII) 4.88

TOTAL INCOME (XVI) 292.29

EXPENDITURE.

Annual Expenditure (Costs of Operations,
Upkeep, and Maintenance)

Farming Costs (II)	33.76	
Fishing Costs (III)	1.65	
Animal Costs (IV)	2.89	
Land Rent Paid (V)	19.56	
Building Rent Paid (V) ... ..	.30	
Food Costs (X)	49.80	
Clothing Costs (X)	12.65	
Household Supplies (X)	10.18	
Business Costs (XI)	4.05	
Interest Paid on Debts (XV)	12.80	
All Other Costs (Civil, Transport, Education etc.) (XI)	29.82	
	<hr/>	
Total (XII)	177.46	177.46

Capital Expenditure (Investment in
Capital Goods)

Land Bought (V)	16.99	
Buildings Bought etc. (V)	8.94	
Farm Equip. Bought (II) ... ..	.43	
Fishing Equip. Bought (III) ... ..	.66	
Animals Bought (IV)	6.43	
Gold & Silver Bought (XIV)	1.80	
All Other (XIV)	1.65	
	<hr/>	
Total (XIV)	36.90	36.90

Debt Reduction (Chiefly repayments made
on outstanding debts) (XV) 35.36

Loan Increase (Chiefly money loaned
to others) (XV) 4.40

Extraordinary Expenditures

Medical Costs (XIII)	5.45	
Ecclesiastical Costs (XIII)	21.12	
Social Costs (XIII)	2.58	
Ext. Civil Costs (XIII)	2.22	
Gambling losses and other (XIII)	1.19	
		<hr/>
Total (XIII)	32.55	32.55
		<hr/>
TOTAL EXPENDITURE (XVI)		286.67

CHAPTER II.

FARMING.

INTRODUCTION.

Over 80% of the population of Siam, and probably an even greater percentage of the utilized land of the nation, are engaged in agricultural productivity. Not all of the crops raised are sold, but farming and its allied activities form the direct source of most of the people's income and the ultimate source of most of the nation's revenue. It is fitting, therefore, that we should open our discussion of economic conditions in Siam in 2476 by examining the data on agriculture. It is of the highest importance to the nation that the economy of crop production in various parts of the country should be well understood, and that it be directed into the most efficient possible lines.

The economy of farming must be divided into two contrasted categories. One is the sum total of the energy and expenditure which must be put into the soil, and the other is the sum total of the benefits which are derived from the soil. We will consider the former first.

FARM COSTS: WHAT THE FARMER PUTS INTO THE SOIL.

The energy and expenditure which are put into the soil in order that it may produce crops may be classified thus:

(1) Equipment purchase and upkeep. Under this heading we will consider all those expenditures for material aids to farming which the farmer must make, on the average, every year. They include costs of seed, fertilizer, perishable equipment, repairs to permanent equipment such as carts and machinery, and fuel for machinery.

(2) **Equipment and Animal Hire.** The farmer who does not own enough animals or permanent equipment must hire them from others or go without. Under this heading we will consider all expenditures made for hire of buffaloes, bullocks, horses, and all agricultural equipment.

(3) **Transportation of crops and equipment.** The crops, when harvested, must be transported to the middlemen or mills; and it sometimes happens that a farmer must transport agricultural equipment. In some cases the farmer pays cash or commodities for this service instead of performing the transportation himself. Such payments are included under this heading.

(4) **Labor.** This factor includes the labor which is performed by the farmer himself and by the members of his family, and the human labor which he hires to assist him.

The labor which the farmer hires can be stated in terms of the cash or commodity equivalent which he pays for it. The labor which the farmer and his family perform cannot be satisfactorily appraised in Siam.⁽¹⁾ Labor costs in the present study, therefore, includes only those amounts in cash or the equivalent of cash which the farmer pays for human labor. It also includes whatever amounts the farmer may have paid for irrigation as, in this case, he has paid for labor performed by others for his fields.

(5) **Farm taxes.** Those taxes such as Land Tax, Land Registration Tax, Vehicle Tax, Timber Tax, and the like which bear directly on the farmer as a result of his farming enterprise must be considered as one of the important costs of farming. Other taxes.

(1) This factor is sometimes stated in cash in other countries. The researcher must find out how many hours during the year are spent by the farmer and each member of his family in farming, and must then determine what they might have earned in cash if they had been engaged in other available activities for the same length of time. The computation is never exact, but it can be used to advantage in countries where there are many farm laborers. It cannot be used in Siam because agricultural labor on a wage basis is uncommon, and because it is quite impossible to determine how much time is spent by the farmers and their families in the fields. Most Siamese farmers, when not working in the fields, devote the major part of their time to rest and recreation even though the period when the fields need not be worked is often over a month.

such as Head Tax are not included in this category because they affect the rural Siamese whether he is a farmer or not.

(6) Total Annual Farm Costs, in the present study, includes the total of all the foregoing categories. It is a statement of the amount which the average farmer of each community must pay for the crops which he raises during the year.⁽¹⁾

(7) Investment in Farming Equipment is not included in the Total Annual Farm Costs because it represents expenditures which do not have to be made every year. If a farmer spends forty Baht for a new cart he expects the cart to serve him for a number of years and, by owning the cart, he will save himself the necessity of having to hire a cart from another farmer. Such expenditures are reckoned as investments, and it is important to know how much the farmer is spending in this way. A progressive farmer wishes to own all the equipment which he needs to farm his land, and when we find that farmers are buying permanent equipment on a considerable scale we may be sure that they are placing themselves in a better economic situation. These figures, therefore, are given in the same table as the Annual Farm Costs for comparison with these latter, but they are not included in the Total Annual Farm Costs.⁽²⁾

(1) It is to be noted that two other categories of farming costs,—aside from investments,—are not included here. These are land rentals and animal upkeep.

Land rentals paid roughly balance land rentals received except in Central Siam. In many parts of the self-subsisting areas land is available almost for the asking and land rentals are almost non-existent. It was desired in this study to make the data on farming costs for the major areas as closely comparable as possible in order that the effects of different techniques might be observed. Land rentals, therefore, are considered as separate from farming costs in the chapter on "Land and Buildings".

Animal upkeep,—annual expenditures for animals,—are in Siam almost wholly for purchase of poultry and purchase of food for pigs. Neither poultry nor pigs are working farm animals, so animal upkeep has been treated as part of a separate enterprise in the chapter on "Animals".

(2) It is usual to consider one tenth of the investments as an annual cost,—on the assumption that permanent equipment wears out, on the average, in about ten years and must then be bought anew,—but in this analysis of farming costs the investments were found to be so small that it was not considered necessary to perform this operation.

Investments in the major agricultural animals,—water-buffaloes and bullocks,—are not considered here but are treated separately in the chapter on "Animals".

The average for these various farm costs, per household in the four major divisions of Siam, were in 2476 :

DIVISION	Equip. Purchase and Upkeep	Equip. and Animal Hire	Transport of Crops	Labor Hire	Farm Taxes	Annual Farm Costs	Invested in Farm Equipment
North-east	0.54	0.49	0.09	0.70	1.51	3.33	0.63
South	0.56	0.80	0.10	1.01	1.94	4.41	0.06
North	0.49	0.93	0.16	3.57	2.12	7.27	0.48
Center	3.13	0.85	0.62	16.92	12.23	33.76	0.43

It is apparent at once that a very great similarity exists in the farming costs of the North-east and the South. In both areas the farmer puts into the soil little money and very little energy save of his own production. Costs are very low and, as we shall see, the resulting income from crops is also low. The farmer performs almost all of the farming labor himself and with the aid of his family, he buys little in the way of perishable equipment since he can make most of it himself, he performs the transportation in his own carts or boats, and his tax bill accounts for nearly half of his whole farming expenditure. The farmers of these areas raise crops almost wholly for their own consumption: since little is sold, little can be bought.

One significant and marked difference is noted between the two self-subsisting areas. The amount which the North-eastern farmer invests in carts and heavy equipment is nearly ten times what the Southern farmer invests in the same way, and the latter must pay nearly twice as much as the North-eastern farmer for the hire of animals and equipment which he does not possess. This is a strong indication of the progressiveness of the North-eastern farmer as compared with the Southerner, and it is a contrast which is apparent in many other categories.

In North Siam farming costs are nearly double what they are in the North-east and South, and the reason for this lies chiefly in the greater amount of human labor employed.

In the Center, where agriculture is much more commercialized, farming costs are nearly five times what they are in the North. The increase is significant in nearly every category of the expendi-

ture except in equipment hire. The Central farmer hires few animals and little equipment because he has found that it is cheaper in the long run to buy and own them than to hire them.

Investments in farming equipment are lower in the North and Center than might be expected. The reason for this is probably that the lessened income of the past few years has caused the farmers to defer large purchases until a better year.

Let us now turn to the regional data presented in Tables I—A, B, C, D, on pages 48–51 for a consideration of the variations in farming costs from district to district within the larger areas.

In the North-east the farming costs do not appear to vary much from community to community, but they seem to be higher in the districts near Nagor Rajasima, Ubol, and Khonkaen than elsewhere. The reason for this is probably that these three regions are, respectively, the junction and two terminal points of the North-eastern railways and that, as a result of trade and other developments in the three Changvad centers, agriculture has become slightly more commercialized there than in the remoter districts.

In the South we find, as in the North-east, that there is little significant variation in farming costs from region to region. They do seem, however, to be lower in the Naradhivas and Pattani districts than elsewhere,—evidently as a result of the fact that less human labor was employed there. The inhabitants of the two villages studied in these provinces were chiefly of Malay blood, and it has been suggested that the Malays tend less than the Thai to employ labor for farming. They do not commercialize crop production to any significant degree, and it is said that their social habits generally make it possible for the householder to have his work performed gratis by dependents. This suggestion cannot be accepted at its face value without further corroboration, but it is a possible explanation of the fact that these two villages spent less for human labor than others in the South.

In the North also we find few fluctuations in the farming costs except in the case of the Laplae community. Amphur Laplae is a great fruit raising district, and it is strongly differentiated from the other Northern regions in the greater extent to which it makes

use of hired labor. The high average of Baht 20.06 per household in this village, however, is due in part to the hire of mahouts to care for elephants and is not wholly, therefore, a strictly farming cost. The elephants were used in a few cases for crop transport, but they are kept chiefly in the hope that the teak industries will employ them in the forests. Farming labor is high in this amphur, however, because of the need for laborers to guard the extensive fruit orchards, to collect the harvest, and to perform a certain amount of ditching about the bases of the trees.

In the Center we find that farming costs range all the way from an average of Baht 9.71 in the Pitsanulok region to an average of Baht 79.81 in the Nontaburi community. In general, the variation may be taken as an indication of the varying degrees to which agriculture has become commercialized in different districts. The high figure in the Nontaburi community, however, is not to be traced wholly to this factor: it is largely due to high charges for labor and high taxes on the extensive fruit orchards.

In the South-east, which is not included in the average for the Center, average farming costs are probably fairly low and not unlike those of the North-east and South.

In Amphur Ta Mai, however, there has been a great development of pepper culture, and average farming costs are seen to be higher than in any other village studied by the Survey. The reasons for this are the high costs of pepper-plant medicines, young pepper-plants, manure, and the poles on which the plants are grown, as well as the large amount of hired labor which must be employed in the commercialized economy of the big plantations. "Kapiet" (*Stemona*) and tobacco juices are used to kill insect pests, and various imported medicines are used against the fungus disease with very moderate success. New plants must be bought every year to replace those which have been killed off by the fungus disease, and it is customary to replace a fairly large percentage of the poles every year. Some of the poles can be used for periods of several years, but annual replacements are so large that it was decided in the course of analysis to treat their cost as an annual expenditure rather than as an investment.

It must be remembered that Amphur Ta Mai is by no means typical of the South-east as a whole: it is a very highly specialized region. Klong Naraya, on the other hand, is a fruit village with an economy which must differ somewhat from that of the low rice plains which constitute the greater part of South-east Siam.

INCOME FROM CROPS: WHAT THE FARMER GETS OUT OF THE SOIL.

It must be remembered that the greatest benefit which the farmer derives from the soil is the food with which to feed his family and himself. In most parts of Siam little more is raised than is needed for home-consumption, and it is not now possible to present figures on the value of this production and consumption. The figures given for "Income from Crops", therefore, include only the returns in cash or commodities which the former obtained by selling or bartering a part of his produce.

The summarized divisional data are as follows:

DIVISION	Rice	Fruits	Vegetables	Others	Total Income from Crops
North-east	4.31	0.87	1.53	1.03	7.74
South	2.84	4.54	4.63	5.75	17.76
North	7.07	4.23	2.14	5.55	18.99
Center	78.21	20.16	3.36	3.74	105.47

We see that, except in South Siam, rice is everywhere the dominant crop. In South Siam fruits and vegetables, which grow wild in many districts and require little if any cultivation, combine to give the Southern farmer a much bigger income from crops than his North-eastern cousin can obtain by the expenditure of roughly the same amount of money and vastly greater energy in his fields.

In the North rice-culture is more commercialized than in the North-east and South, and an income roughly equivalent to that of the South is obtained by energetic cultivation of glutinous rice.

In Central Siam rice-culture is highly commercialized in many districts, and others specialize to an equally high degree in fruit-growing. The result is a high average income from crops.

Let us turn to the regional data of Tables II D on pages 58-59 for an examination of the variations in crops from district to district.

In the North-east we find that, except near Nagor Rajasima, the income from crops is chiefly derived from glutinous rice. The Nagor Rajasima community had an average income from crops which was nearly double the next highest found in the North-east and this relatively high income came primarily from non-glutinous rice which was suitable for export. These facts bring us face to face with an important problem in the development of agriculture in North-east Siam.

Non-glutinous rice,—the ordinary rice of commerce,—can be produced on a commercial scale and exported: glutinous rice cannot,—the market for it is too limited. A soil and environment which will grow glutinous rice can usually be made to grow non-glutinous rice. It is consequently possible for the population of North-east Siam to grow ordinary rice, and it is necessary that they should do so if rice-culture in that area is to become economically profitable.

No man knows where or how the Lao people came to grow and prefer glutinous rice, but it is a fact that the areas populated by Lao in Siam do grow glutinous rice and, usually, none other. Thai, Chinese, most Asiatic, and all Occidental peoples prefer non-glutinous rice and so, unfortunately, the Lao's glutinous rice has only a very small and local commercial market and can never become a commodity of high economic importance. The Lao must learn that ordinary rice, whether they eat it themselves or not, is a good potential source of income for them.

People with more Thai than Lao blood appear to have settled in the region near Nagor Rajasima, and it is probably for this reason primarily that ordinary rice is grown there. Ordinary rice is also grown near Khonkaen and Chonabot in districts not far from the railway line between these two points (although it was not found in the particular village of Changvad Khonkaen which was studied by the Survey) and it is exported in some quantity to Nagor Rajasima and Bangkok. The same is true of a number of districts in Surin and Buriram on the other branch of the railway. These facts prove

that the country can grow non-glutinous rice and that it is possible to introduce the crop to Lao people.⁽¹⁾ It is highly desirable that the process should be carried further because, in the light of such information as is now available, it seems likely that ordinary rice can more readily become a valuable commercial crop for the North-east than any other. Also, the people already grow rice, and they can more easily be induced to grow a different type of rice than to undertake the cultivation of a wholly different crop.

What are the steps by which ordinary rice has come to the Khonkaen and Surin regions? There seems to be no doubt that the prime factor has been the availability of communication and, since rice mills were established in the Kingpai and Chonabot districts before the railway was put through to them, it is apparent that the communication need not be by rail. Before the railway was started from Nagor Rajasima toward the North a fairly good highway was in existence, ordinary rice was grown and milled between Khonkaen and Korat, and was sent by motor lorry to Nagor Rajasima. It seems that, just as in the area North of Chiangmai today, it was found profitable to do this even though transport by bullock carts was cheaper and the road was not very good.

As soon as there are roads which can be used by motor lorries, trade and transport are quickened and the farmers begin to produce the crops which can be sold.

Development by the government of surfaced roads which are suitable for motor traffic in all seasons of the year is, then, the best way in which to develop commercialized agriculture in the North-east. We shall see in another place⁽²⁾ that it is desirable to continue the railroad from Udorn to Nongkai but, aside from this, a better and less expensive stimulus to agricultural development will be secured by road development than by railway expansion.

After rice, it is clear that vegetables have the most economic importance among the crops of the North-east. These,—like all crops in the area except ordinary rice,—are sold in the local markets

(1) The rice mill at Kingpai handles ordinary rice grown by Lao.

(2) See page 388.

and are not exported from the North-east at all. Most families grow their own chillies, onions, and garlic; but these are less frequently raised for sale than cucumbers, beans, radishes, and pumpkins. The four last mentioned crops account for most of the income from crops which is classified as from "Vegetables".

Next to vegetables, in economic importance, are fruits. Most of the income under this category comes from bananas, from sugar cane in the Nagor Rajasima and Udorn villages, from mangoes in the Udorn and Nongkai regions, and from maprangs (*Bouea burmanica*) in the Nongkai district. Jackfruit (*Artocarpus integrifolia*) is widely grown within the villages, but is not extensively sold.

Fruits,—especially papaya,—and chillies are important crops in the Pak Chong district of the Dong Phya Fai hills.

Sera leaf is an important source of income on the farms near Nongkai. Betel-nuts and coconuts are grown throughout the area and are of some economic importance: most families raise enough for their own consumption on their own property.

Tobacco is grown to some extent in the Southern part of the area, in the higher region which lies between Khonkaen and Leui, and along the banks of the Mekong river.

Cotton, although of no importance as a crop in any village studied by the Survey, is said to be grown in a few specialized districts near Ubol, and it was found by the Survey in the same region between Khonkaen and Leui which grows tobacco. The great development of home-weaving and a considerable consumption of imported foreign cotton may be taken as indications that the cotton crop might become economically important in North-east Siam.

Silk, although not specifically a crop, is of the same status. It is widely produced throughout the North-east for home weaving and, in some districts, is cheaper than cotton. It has the same potentialities for development as cotton, and depends primarily on the commercialization of the weaving crafts with a resulting commercial demand for silk and cotton.

Under the classification "All Other Crops" we find peanuts, maize, and soya beans in the North-east. Near Nagor Rajasima, apparently, peanuts grow well.

Before leaving the crop data from the North-east we should not fail to note that income from all crops other than rice appears decidedly to be dependent on the development of communication. It amounts to an average of only Baht 0.06 in the Sakolnagor village, and is very low in the Pu Vieng and Khukan communities.

Of the nine North-eastern villages studied, the two near Pu Vieng and the one near Sakolnagor had the poorest communication. The cart tracks were bad and deeply rutted: in the dry season they could only just be traversed by motor lorries, and in the wet season they are quite inaccessible to motor traffic. The same was true of the Khukan village although in this case the distance from the village to the railway station of Srisakes was only a few kilometers.

The development of good highways leads to market centers, and when the farmers can get to market centers they can dispose of their crops.

In the South we find not rice, but vegetables and fruits, are the crops of greatest importance from the commercial standpoint. It has already been said that many of these grow wild and require little or no cultivation.

The most important of the vegetables is the long green seed-pod of *Parkia speciosa*, known in Siamese as "stor." This is a large jungle tree which grows uncultivated in South Siam and Malaya along the waterways and in the thick jungle of the land between the base of the hills and the coast. Little in the way of cultivation is ever done with it: the country people pole their boats along the waterways, go ashore where they see the trees, and cut down the pods. In Bangkok, Penang, and Singapore the seeds are in some demand as food: the country people often eat the pods as well. They are said to have a highly astringent flavor, and are reputed to have some medicinal value. The tree appears to be widely distributed and was of high economic importance in the districts of Surat, Naradhiwas, Songkla, and Pattani.

"Nieng", *Pithecolobium lobatum*, is collected in much the same way: its importance was chiefly restricted to the Surat region. Vegetables of less importance, requiring cultivation, are sweet potatoes, cassava, and various beans.

Coconuts are of great importance throughout the South. Since the prices which the copra industry could offer were very low in 2476 most of the country people didn't bother to collect their crops. There can be no doubt that South Siam could produce an enormous crop of coconuts if the people were so inclined.

Under the "Fruits" category we find nearly all the tropical fruits. Most grow with little if any cultivation: the people collect enough for their needs and take a few to market if they desire to sell or barter them for other commodities. Bananas, sugar-cane, mangoes, sugar-palms, pine-apple, rambutan (*Nephelium lappaceum*), mangosteen (*Garcinia mangostana*), sapodilla (*Achras sapota*), langsat (*Lansium domesticum*), santol (*Sandoricum indicum*), durian (*Durio Zibethinus*) and almost countless other fruits flourish. It is amazing, in view of their opportunities, that the people make so little use of them. Almost without effort they collect from the soil their food and an annual income from crops which is more than double that of the relatively hard-working and progressive farmers of the North-east.

Betel-nut grows in all regions of the South, and is sold to some extent. Sera leaf is little cultivated for sale although it could undoubtedly be made a major crop.

Among the "All Other" crops of importance are kratom (*Mitragyna*), a leaf which is chewed and which produces a mild stimulating and narcotic effect, maize, peanuts, kapok, and attap which, in a few regions, is encouraged to grow along the waterways because of its value as a roofing material.

The farmers seem to produce very little rubber even though experience has shown that rubber plantations can be made decidedly profitable in South Siam. We need not be surprised that the people of the South derive little income from rubber if we remember that the great majority of them are not at all disposed to engage in energetic work. It is likely that a very large number of rubber trees in South Siam are untapped.

Pepper is scarcely raised at all, but there are probably many districts which could parallel the high development of pepper which has taken place in Amphur Ta Mai in Changvad Chantabun.

In the North, as in the North-east, the population is chiefly Lao and the dominant crop is glutinous rice: it accounts for more than one third the total income from crops. Again as in the North-east, it is found that a number of farmers in a few districts with good communication have taken up the culture of ordinary rice. This is especially the case in the communities near to Chiangmai and Lampun. Experts state that the quality of some of the non-glutinous rice raised in these regions is equal or superior to that of any other rice in Siam. It is to be hoped that this development will be encouraged in those regions which seem best suited to it, but it is likely that most of the valleys of the North can be made to yield more valuable crops which cannot be raised so well in other areas.

We have suggested that the culture of ordinary rice should be encouraged in the North-east because we know that the crop will grow there, because it will be easier to introduce cultivation of ordinary rice than that of some wholly different crop, and because we do not yet know with certainty what other crops may be well suited to the area. We have pointed out that many crops grow to fine advantage in South Siam, and it follows that rice culture in that area should not be encouraged to exceed the amount necessary for home-consumption. Let us now see what the evidence is for other crops in North Siam.

The averages for the division show that fruits are second only to rice as a source of agricultural income, but we must note also that fruits are significantly more important than vegetables only in the districts near Utaradit and, to a lesser degree, near Prae. The fruits grown here which are the most importance are durian, rambutan, langsat, sugar-cane, banana, and coconut: secondary in importance are the mango, jackfruit, pine-apple, magosteen, pomelo, lime, and maprang. Further North, near Chiangmai, various species of citrus fruits have been grown experimentally and have been found to grow well: none, however, would be considered as first quality fruits in world markets.

Of the villages studied by the Survey Na Kuam, near Lampang, was found to have the highest income from vegetables. In this community cucumbers were most important, with smaller amounts of peas and beans, cabbage, radish, and the like.

Many vegetables have been introduced to the market gardeners near Chiengmai, and observers report that there has been a marked increase in their cultivation during the past few years. Although they are not yet of high economic importance, we should note that the crops which have shown the highest promise near Chiengmai are cabbage, tomatoes, cauliflower, beets, radish, peas, beans, high quality onions, and garlic. These are raised today chiefly for home consumption except by the market gardeners near Chiengmai, but their relatively rapid spread is an indication that they will before long have considerable importance. Even in the still more or less isolated Nan valley cabbages are widely grown today and consumed.

Betel-nut and sera leaf are widely grown for home consumption, but relatively small amounts are sold. Better betel-nut is grown in South and Central Siam, and better sera leaf is cultivated in Dhonburi near Bangkok.

Tobacco is a crop of importance in a number of widely separated regions of North Siam, and in the upper part of the Sak valley above Pejabun. It appears that the crop grows best on level land near the base of the mountains, and it seems likely that the small and elevated valleys of Changvads Nan and Chiengrai may be susceptible of development into extensive tobacco plantations. The fine quality which is commonly imputed to "Pejabun tobacco" from the Sak valley should be investigated: it may be that conditions are even better for tobacco there.

The most important crops which are included in the "All Other" category of the North are lac and "mieng",—the fermented leaves of a tea shrub. Less important are peanuts, maize, and sessamum.

The value of the lac crop depends on foreign demand: the drop in world prices has greatly damaged the economic status of farmers who formerly profitted greatly from lac sales. Although prices have recently been a little better, it seems probable that lac cultivation should not be encouraged. The development of synthetic organic compounds in industrial nations is likely to prevent the world demand for lac from increasing.

Some "mieng" is exported by traders to the Shan States and South China, but it is not in demand in Bangkok and is not likely to become a crop of high economic importance. It is today, however, of considerable importance in those communities which specialize in growing it or in collecting it from the hill sides; and the success with which it grows may be an indication that tea culture for foreign and domestic consumption might be introduced.

The indications are that North Siam should develop cultivation of many crops other than rice. Fruits and vegetables should be encouraged in the lower valleys, and tobacco should be developed in the upper valleys. Experimentation with tea in the upper valleys is to be urged.

In the Center income from crops is dominantly from rice. In the intensively irrigated and commercialized districts such as the villages of Dhanyaburi and Ayuthia which were studied by the Survey,—average income per household from this source alone ran nearly to Baht 200.00 in 2476. More than 99% of this rice is non-glutinous and suitable for export: very small amounts of glutinous rice are grown for home consumption in the form of cakes and sweets.

Second in importance to rice are fruits. In the district near Nontaburi it was found that no rice was sold at all in 2476, but that there was an average income from sale of fruits which amounted to Baht 154.49 per household. The fruits grown are essentially those of South Siam.

It is clear that some districts of Central Siam specialize in fruit culture to almost as great a degree as others do in rice cultivation. Where rice is grown extensively, fruits and vegetables are scarcely sold at all: where fruits are raised extensively, rice is grown almost wholly for home consumption. This specialization is an indication of efficient economic development.

A few districts in the Center grow considerable amounts of vegetables for sale, and the vegetables grown are quite different from those of the North. They are chiefly plants which grow well on the canal banks or in the water itself: they include many for which there are no English names, but they are much used in Central Siam and are usually available in Bangkok markets. They include, most im-

portantly, many species of *Solanum*, *Cucumis*, *Benincasa*, *Cucurbita*, *Ipomoea* and *Momordica*. Fennel is an herb which is in great demand as a seasoning for Chinese and Siamese dishes. Lotus seeds and stems are eaten, and there is a great variety of aquatic plants which are occasional articles of diet.

A few district, notably near Dhonburi, specialize in the cultivation of betel-nut and sera leaf: the sera leaf grown here is said to be the best in Siam.

Coconuts are raised for home consumption, and are unimportant from the commercial standpoint. Also unimportant are maize and peanuts which are found in the data under the "All Other Crops" category.

It is apparent that agriculture in Central Siam has already undergone a considerable amount of efficient specialization. Market gardens near Bangkok supply the capitol with vegetables, big fruit orchards in Dhonburi and along the river banks supply the fruit which is distributed by boat and rail to many parts of the Kingdom, betel-nut and sera leaf are specialized near Bangkok, and the flat plains of the Menam valley supply rice which is widely exported and which furnishes the greater part of the nation's income. The problems of agricultural development in this area are chiefly those of improved communication, distribution, and crop quality: they will be considered in a later paragraph of this chapter.

In the South-east the Survey's data are of little assistance in forming a general picture of the area as a whole. Most of it is flat low-lying country which produces rice chiefly for home consumption. Our data from Chaxerngsao probably indicate to a fair degree the relative importance of the crops grown in the South-east, but undoubtedly give higher average figures than would apply to the South-east. Chaxerngsao is a district much like the greater part of the South-east, but it has rail and some water communication while the South-east, except for the sea-coast, is almost incommunicado.

Along the sea-coast of the South-east there are a number of regions where the outlying hills of the Kao Sabab range provide small plateaux considerably above the level of the surrounding rice plains, and with a special adaptability to pepper cultivation. Am-

phur Ta Mai, near Chantabun, is an outstanding example: the village which the Survey studied in this amphur was found to have the highest average income from crops which was found in all Siam, —Baht 479.04 per household in 2476,—and nearly 90% of this came from pepper. Rice is grown only for home consumption, and large pepper plantations cover almost the whole surface of the plateau. Fruits are grown on the hilly sides of the plateau just as they are in the other districts of Chantabun which lie near the hills: in Ta Mai, although they provide only one tenth of the total income from crops, they are still an important crop.

In Klong Naraya, which may be considered as fairly typical of the fruit villages at the base of the hills, the income from fruits is about the same as in Ta Mai, but there is no pepper. More rice is grown, and the agricultural economy of the village is not unlike that of Laplae though it is not so highly specialized and is without the communication which is necessary if a good market for fruits is to be found. Rambutans and durians are grown in greater quantity than in any other region of Siam, but the durians are not as good as those of Dhonburi and the rambutans are second in quality to those of Satul.

The greatest single problem of the area, and one which should be tackled at once, is the fungus disease which attacks the pepper plants. Locally made medicines of kapiet and tobacco juice seem to be fairly effective against the insect pests, but no medicines available seem to do more than prevent the fungus disease from finally overwhelming the plantations. As it is, a large number of plants are destroyed every year; and it is not uncommon for all the plants in a fairly large area to be killed. The farmers spend an average of Baht 169.50 per year on agricultural equipment and upkeep, and a very large percentage of this goes for plant medicines of dubious value.

The first steps in tackling the problem seem obvious.

A senior and really expert plant pathologist who has had personal experience with pepper diseases should be hired for a few months or a year from Java or some other country which has a pepper agriculture and which has already faced such problems as this. This

expert should be given travel and other facilities to visit Chantabun and a few of the other regions where the problem exists. His inspection of the plantations should take only a few weeks, but it might need to be repeated at a different season of the year. He would collect samples of such different diseases as he found, and should be permitted to make use of the facilities of the government laboratories and to consult with the plant pathologists of the Bureau of Agricultural Science. It is quite possible that such a man would find the fungus disease to be one which is already well known in other parts of the world, and for which a good solution has already been found.

To send young agricultural students to Chantabun to study this problem would be worse than useless: they would achieve nothing and they would cost the government money. To expect the government plant pathologists to be familiar with the disease is decidedly unreasonable: no one scientist can be familiar with all the diseases which attack all plants. What is needed is an expert who knows pepper and its diseases intimately.

Such an expert would almost certainly recognize the disease and could state the cure for it if one is known. If no cure for it has yet been found, it is safe to say that other laboratories are working on it now. In such case Siam should keep in touch with the laboratories which are studying the disease in order to profit by the cure when it is found.

It is not likely that the disease is one which is found only in Siam.

FARMING PROFITS.

We will be assisted in forming our conclusions as to Siamese agriculture if we compare our farming costs with our income from crops in such a way as to give a rough idea of the profits of farmers in different areas of Siam. The comparison does not give an exact indication, because it must be remembered that various factors which enter the farming business have been omitted from both the Farming Costs and the Income from Crops as analyzed here.

From Farming Costs we have omitted the labor performed by

the farmer and his family because we cannot evaluate it. Land rentals have been omitted because they scarcely enter the farm costs of many areas and, in all areas except the Center, land rentals paid are balanced by land rentals received. The excess of payments over receipts is only Baht 10.50 even in Central Siam. Animal upkeep is omitted because only a very inappreciable part of it is for the upkeep of agricultural work animals. Investments are so small that we have not reckoned any percentage of them as annual Farming Costs.

From Income from Crops we have omitted the value of crops consumed by the farmer himself and, in many cases,—especially in the self-subsisting regions,—the value of crops consumed is considerably higher than the value of crops sold.

Comparison of Farming Costs and Income from Crops will nevertheless give some indication of the relation between what the farmer puts into the soil and what he derives from it.

Divisional figures give us the following results:⁽¹⁾

DIVISION	Farm Costs	Income from Crops	Profits	Percentage which income is of costs
North-east	8.33	7.74	4.41	232. %
South	4.41	17.76	13.95	403. %
North	7.27	18.99	11.72	261. %
Center	88.76	105.47	71.71	312. %

It is evident that the Siamese farmer, although on the average his business is small, is making a considerable gain on his farming operations. When we remember that most of the farmer's food has been subtracted from the crop before the crop was sold, we realize that his gain is even greater than it appears to be. Gradual and carefully controlled expansion and intensification of agriculture will evidently produce a very high return for the people and the nation.

(1) The comparison has not been carried out by regions, as its faults would be accentuated by application to small samples of only forty households.

The most striking feature in the data presented above is the high percentage of profit in South Siam. Here we have an arithmetical expression of the benefits which the Southern farmer derives from the soil with very little effort.

In the North and the North-east about twice as much cash value comes out of the soil as goes into it.

On the same basis of comparison we find that the intensively cultivated Center derives about three times as much from the soil as it puts into it. If we had included land rentals in the Farm Costs, however, the profits of the Center would have been found to have about the same relation to costs as in the North-east. In other words, the percentage of profit in Central Siam has been kept to about the same level as in the self-sufficing areas because of the increasing land values which commercialized agriculture has developed, but the turnover and net profits have been vastly increased by commercialization.

THE FUTURE OF AGRICULTURE IN SIAM.

The population of Siam is today dominantly agricultural: that it will continue to be so for many generations there can be no doubt. Tradition and the psychology of the people incline them to the independent operation of the land which will yield them food: very few of the country people care to embrace such opportunities as are available for participation in other activities. When they do specialize in handicrafts and the like they do so only in the season when the fields may be left idle. For the men, especially, agriculture is primary and all other occupations are secondary. Trading and weaving,—which latter is the most important of Siamese handicrafts,—are almost wholly in the hands of Siamese women or Chinese men.

Our consideration of farming profits has shown us that agriculture is an occupation which has a considerable yield for the people, and we know that it has been the chief source of the national income ever since the Thai first came from Nanchao to what is now Siam. With improved techniques the profits can be greatly in-

creased.⁽¹⁾ It is as desirable as it is inevitable that Siam should remain an agricultural country. Industry will doubtless develop gradually in the urban centers, but it will not do so without many set-backs. Far more important than the development of industry is the development of agriculture, How is this to be done?

Let us turn first to the factors which affect agriculture as a whole. Later we will summarize what we have learned concerning individual crops.

General Considerations. Development of Siamese agriculture will entail:

(1) Wider use of improved farm implements which the farmer cannot make for himself but must buy.

(2) More and better markets for the sale of agricultural produce, since the farmer must be able to sell his crops if he is to have the money to buy better implements.

(3) Education of the farmers in the use of better implements and techniques.

(4) Better business practices, and wider extension of controlled agricultural credit.

Let us consider these points one by one.

(1) The implements which the farmer uses to-day are, for the most part, crude and simple. They are made by the farmers themselves, in their use they entail a great amount of human labor, and they are inefficient. Some of the implements which are needed have been indicated in the report of the 2473 Survey. The agricultural experimental stations are working on this problem in Siam, and their discoveries will have great potential value to the farming community if it is possible to make them available to the farmers.

(2) The farmers must have more and better markets for the sale of their produce if they are to earn the money which will make it possible for them to adapt the use of better implements.

Rice can be handled today in most parts of Siam by the existing systems of communication, but only a small part of the potential

(1) For a statement of existing agricultural techniques in Siam, and of the improvement which seem most likely to be of service to the farmers, the reader is referred to the published report of the 2473 Survey.

production can be so handled. It does not greatly matter if rice is a long time in transport, but even the cheapest forms of transport, if they are slow enough, become expensive in the long run and prevent any wide trade. Garden produce—fruits and vegetables,—cannot be handled by slow transport in bullock carts or on waterways.

Until a tambol has good communication with other tambols and with the provincial markets it can make no use of the fruits and vegetables which it grows. Trade is non-existent or stagnant, crops cannot be sold, and the local market remains only a bartering place with no commercial significance.

When the railways have been pushed to the Burma and North Laos frontiers Siam will have adequate railway communication. It would be uneconomic to develop them further. Cart tracks must be developed into well surfaced highways which can be used by motor lorries in all seasons of the year. When this has been done markets will spring up at the most strategic junctions and stopping points, farmers will be able to dispose of their perishable produce and to buy their supplies at fair prices.

(3) Education of the farmers in the use of better techniques and better business methods can best be done through the Co-operative Societies. It is almost wholly useless to teach these things to schoolboys. No farmer listens to the advice of his young son as to farming methods, and by the time the schoolboy is himself full grown and has become a farmer himself he is thoroughly accustomed to the methods of his fathers and has forgotten the precepts of school-teachers,—at any rate with regard to rice-farming.

The only way in which to introduce new farming methods to the farmers is to do it to responsible adults who can be made to see that it is to their advantage to try out suggested methods. This has already been done to some extent by the Co-operative Societies, and there is strong reason to believe that this method of approach will more quickly bring results than any program of agricultural instruction in the existing schools or than any new development of agricultural schools. There is little use in building agricultural schools until it is clear that the farmers are making use of such information as they can obtain from other sources and are ready to

make the effort which is necessary if their sons are to spend time and labor in voluntary schools.

Each local inspector of the Cooperative Societies is in close and friendly touch with the members of one or more societies. He knows the members well, and they know him well. They have worked on the account books of the Society together, and the inspector has visited their farms and villages many times in the course of his official duties. When the inspector tells the members of a new rice seed or of some other innovation which has come to his attention, the members of the society are usually willing to set aside a small plot of land to experiment with it in common. If the results are good, the use spreads,—first to other members of the society and then to other members of the community. By expansion of this idea, and correlation of the Cooperative Society inspectors with the findings of agricultural experiment stations and other government agencies, a method of instruction can be developed which will quickly bear fruit among the present day farm population.

It would be beneficial if a close rapprochement were brought about between the Cooperative Societies and the other departments of the Ministry of Agriculture. The Ministry might delegate some of its research men to make occasional visits to Cooperative Societies in those regions which would be most benefitted by introduction of recently discovered innovations. These men should not be professional lecturers and teachers: they should be professional agriculturalists who spent the greater part of their time in agricultural research and were ready to spend a week or two in the season after harvesting and before planting in spreading the information which they had acquired. They should visit a society only at the same time when a regular meeting was to be called, they should explain to the members the innovation in question, and they should be prepared to oversee or to obtain the assistance of the inspector in overseeing the first attempts of the members to put the new principle in practice.

(4) Agricultural credit is a matter of the greatest importance to the farming population. It has been made the subject of a special chapter of this report and need not be discussed here. The chief

conclusion reached is that agricultural credit must be expanded, it must be carefully controlled and maintain the personal reliability of the borrower, and it can best be futhered by expansion of the Co-operative Societies.

Rice is the most important crop of the country. Development of agriculture must entail as one of its principle provisions the development of rice-culture.

Production is not the primary problem of rice agriculture in Siam. The supply is ample for the markets today and may, if the prospective loss of the Indian market is not made good, be excessive tomorrow. To keep the present markets and to develop new ones it is necessary that the quality of the produce should be improved and standardized and that the technique of distribution should be improved.

Most of the rice exported today must go through the hands of dealers in Hong Kong and Singapore, and there seems to be no doubt that these dealers mix good and bad rice together to such an extent that "Siamese Rice" is no longer regarded, as it once was, as the finest rice in the world. "Siamese Rice" in the occidental markets has become simply a commercial name which no longer means either that the rice is of fine quality or even that it was grown in Siam. It is said that some fine Siamese rice, exported under special conditions to guarantee its quality, has recently been sold in Europe under another name in order that it might not be confused with the "Siamese Rice" exported by Hong Kong and Singapore dealers. Statements of this sort are obviously hard to verify, but there can be no doubt that the reputation of Siamese rice has greatly suffered and that this is due chiefly to the operations of foreign traders in Hong Kong and Singapore.

Even the rice which is exported, in small quantity, from Bangkok direct to the consuming countries is not standardized in quality. Rice must be standardized in Bangkok and it must be shipped directly from Bangkok to the foreign markets if it is to regain its old reputation and obtain the preference, and higher prices, to which it is entitled.

Trans-shipment of rice at Hong Kong and Singapore, and

at Koh Sichang in the Gulf of Siam, increases the cost of Siamese rice to the consumers and diminishes the profits available to Siamese. Development of the Port of Bangkok will make it possible for rice to be shipped direct from Siam to consuming countries, a greater profit will be available for Siamese, and the rice sold in other parts of the world as "Siamese Rice" will have to be Siamese rice in fact. Development of the Port will result in an even greater, if less direct, advantage to the Siamese rice trade in addition.

There seems to be today no Siamese who knows the rice trade well enough to assume responsible control of any system for rice storage, standardization, distribution, or sale. It is this unfortunate fact which has made the silo system and other distribution schemes designed to improve the rice business impracticable. If the silo system were started today by the government it would have to be controlled by foreigners,—Occidental or Asiatic,—or risk almost certain financial failure. How are Siamese to gain the experience and knowledge which are necessary if they are to assume control of such enterprises? It is useless to send young Siamese to agricultural or business colleges for this purpose: what is needed is a long apprenticeship in rice trading offices, and this apprenticeship cannot be of practical value to the nation as long as it is available only to a selected few who can be financed for a brief visit to Hong Kong or Singapore.

As soon as the Port of Bangkok is available to steamers capable of transporting paying cargoes of rice to all parts of the world, privately owned business houses will establish themselves in Bangkok to handle the rice trade. These houses will be, to begin with, owned by foreigners; but there will be no disadvantage in this to Siam. No Siamese could found and run such a house to-day with success. When such firms are in Bangkok, however, there will be ample opportunity for young Siamese to learn the business at first hand and in the only way which will be of practical value. Within a few years of the opening of the Port a formal rice-exchange would probably become a necessity. It would be brought into being by

traders in Bangkok, and would soon be one of the most important rice exchanges in the world.⁽¹⁾

The Siamese people are not psychologically inclined to spend much time or energy in business: it is for that reason that so much of the trade of the country is in the hands of Chinese and Europeans. Not even the most energetic of them will become business men by studying books on economics. With a big rice trade centered in Bangkok, however, there will be a real opportunity for young Siamese to learn a business which should properly and one day will be in the hands of Siamese.

Standardization will be demanded and practised by the traders themselves as soon as the bulk of the Bangkok shipments to world markets is sufficiently large to make it worth their while and when they are assured that their own efforts to standardize will not be offset by manipulations in Hong Kong and Singapore. The effect of the stimulus to the rice trade will be felt by every farmer in Siam and the hope of greater profits will have a real effect in encouraging the use of better implements and techniques as well as of more careful seed selection. It is also certain that the development of the Port will make it possible, with reduced shipping costs and improved quality, for Siam to compete with other countries for the world rice trade to much better advantage.

The broad and low-lying flood plains of the Menam Chao Phya valley below Utaradit and of the Mekong drainage in North-east Siam seem best suited for the cultivation of rice. Time and further investigation may show that cotton or other crops can be grown as well in the North-east, but in the light of our present knowledge we must conclude that rice culture is to be encouraged in both these areas. This is especially true of the Center because of the difficulty which will be encountered in constructing motor high-

(1) Commodity exchanges are a result of business,—not a cause of it: there is absolutely no advantage in establishing them until they are demanded by the traders who will use them. For the government to establish such an exchange in Siam today would be quite futile, as there is no trade in Bangkok which requires one. It would be a building which would cost a certain amount in upkeep and which would be empty except for government paid clerks with nothing to do.

ways there: rice can be handled by slow water transport better than other crops. In the North-east it will be necessary for glutinous rice to give way to non-glutinous rice if the crop is to become of economic importance. Better communication has already spread ordinary-rice-culture to those parts of the North-east near Nagor Rajasima, and we may be sure that the expansion will continue as fast as the roads. In North and South Siam rice should be grown for home-consumption and need not be encouraged commercially: other crops will grow as well and may be of greater value.

Vegetables increase in importance in every part of the country where highway communication is improved. Most vegetables are easily perishable: they cannot be shipped even from one tambol to another by bullock cart or boat.

The valleys of North Siam can grow vegetables which are generally associated with a temperate climate. Market gardening will probably never develop and great export value, but it can be of high commercial importance within Siam itself. The valleys of North Siam and the upper Sak river should provide the urban centers of Siam with all the vegetables they need. When increased economic development brings its rewards to the consuming population in the form of bigger incomes it should be possible for the railways to ship vegetables and fruits in refrigerator cars from the North to all the larger cities of Siam. The many aquatic and specifically Siamese vegetables of Central Siam can be handled in the same way. Garden produce is shipped in this way over much longer distances in many other parts of the world.

Fruits such as the rambutan, durian, mangosteen, and sapodilla grow well in most parts of the South, in a few districts of the Center, and in a few important districts of the South-east. Citrus and some other fruits seem to grow best and to be of highest quality in the districts lying at the base of the hills in the North. Both of these developments should be encouraged.

Tropical fruits are of small commercial importance today because they cannot be shipped without spoiling; but we should not lose sight of the fact that many laboratories in the fruit raising districts of the United States are working today to discover means

of preserving these fruits in a fresh condition. One specialist in this research has recently announced that a method of suspending enzyme action has been found which, within ten years, will be of practical application and will make possible the shipment of every variety of fruit for any length of time. It is not too much to expect that such methods will be discovered within a few years, and it is possible that fruit culture in Siam will be encouraged by opportunities for export to non-tropical countries. Whether this be so or not, the development of communication and markets in rural Siam itself will extend a wider sale to fruits and vegetables of all descriptions.

Coconuts grow best in Southern Siam, and it is there that they are chiefly raised. The crop already is larger than necessary: in 2476 many farmers did not bother to collect the ripe fruit.

Betel-nut and Sera leaf can be grown in most parts of the Kingdom. The same factors which will lead to increased opportunities for sale of fruits and vegetables will apply to them, but it is not likely that they will ever be exported in any quantity. In view of the large amounts spent yearly by Siamese farmers for these products, it is likely that their cultivation might be improved by better technical methods with financial advantage. Sera leaf seems to be best in the neighbourhood of Dhonburi but if, as seems probable, the river banks on both sides of the isthmus of Paklat are not safeguarded by bulkwarks, the Menam Chao Phya will soon cut through that isthmus and carry salt water just eighteen kilometers further up the river than it now goes; and this will bring ruination to the Dhonburi sera plantations and fruit orchards. Development of the Port of Bangkok will have no effect on the Dhonburi plantations because it will not effect either the bulk or the length of the river flow between Dhonburi and the Gulf, but when the river cuts through the isthmus of Paklat the length of the flow will be shortened by eighteen kilometers and the salt water will go that much farther North.

Other sera plantations will benefit by the damage to Dhonburi, and it is probable that the locus of sera cultivation will move farther North. If new technical methods are to be tried out they should probably be introduced to the sera cultivators of Nontaburi.

Betel-nut grows much more widely and with less cultivation than sera leaf. Many regions which have no sera leaf have plenty of betel-nut, and there is correspondingly less need of intensifying areca cultivation in specialized districts.

Rubber. Much which has been said of coconuts is true of rubber. There are many untapped trees in Siam today.

The world market has been glutted with rubber in the past few years and we may doubt if it will ever again pay as much for rubber as it has in the past. In addition to this is the fact that isoprene derivatives and other synthetic substitutes for rubber can now be produced almost as cheaply as natural rubber can be bought in the countries which make most use of this commodity. For many purposes the substitutes are better than the real thing, and there is every reason to believe that they will in future come into much wider use. If this be so, there is little use in attempting to increase the rubber production of Siam.

Tobacco, as we have noted, grows best in the upper valleys of North Siam and in the higher land of Changvads Pejabun, Leui, and Khonkaen. Introduction of better quality stock, which is now being tried experimentally, will probably do much to improve the value of the crop. Operations by foreigners are to be encouraged in this field: the occidental market for tobacco is an enormous one, and it is one which has shown no signs of diminishing in the depression years just past. Occidentals have had long and thorough experience of tobacco,—both in its cultivation and its preparation, and Siam will greatly profit if it is willing to encourage private foreign enterprise to undertake tobacco cultivation and drying in Siam.

Pepper and its problems have been discussed in some detail on a preceding page. The crop is one which is of importance in Chantabun primarily, and it is suffering from a fungus disease which should be attacked at once. The approach is easy and inexpensive, and it may be that a cure for the disease can be found within a few weeks of the time when an experienced pepper expert is called in.

Pepper could probably be grown in South Siam, but there is little reason to develop it there. South Siam can grow many other

crops, and Chantabun has shown that it is especially adapted to pepper.

Cotton grows in the regions where tobacco is found. Much foreign cotton is used by weavers in North-east Siam, and there seems reason to believe that this demand could be met by cotton grown in the same area. It is certainly worth while to experiment with this crop in North-east Siam, but it must be remembered that there is practically no Occidental market for cotton today and there is no assurance that there would be any Asiatic market for Siamese cotton.

Other Crops. Peanuts can be grown in most parts of the country. They have today no real economic significance in Siam, but they have a considerable dietary value for the Siamese rural population and should be encouraged for this reason if for no other.

Maize grows nearly everywhere in Siam, but it has not and is not likely to have any commercial value.

Cassava is cultivated in some Southern and a few other regions. It is a crop which might develop commercial value.

Quinine is not grown in Siam, and it is said that it has been found experimentally impossible to grow it here. Specific information as to the extent of the experimentation seems hard to find. In view of its very great medicinal value to a country where malaria is prevalent, and in view of the high cost of buying quinine, it would appear to be desirable to make further efforts along this line.

Coffee is grown to a small extent in the Chantabun and Lampang districts. Consumption of coffee is small except in the urban and market centers. Even though Brazil has glutted the world markets with coffee, Java coffee continues to have a satisfactory sale and to bring higher prices. It is possible that Siam might develop coffee as good as that of Java.

Cardamoms have long been an important crop of the Eastern slopes of the Kao Sabab hills in Cambodia. They are little grown in Chantabun, but could probably be developed.

Tea for Siamese use, and possibly for export, could probably be grown in some of the Northern districts where "mieng" is now cultivated.

Silk is not properly a crop, but it is often considered as such because of its dependence on mulberry. It is raised for home consumption in all parts of North-east Siam and in a number of regions of the North. Considerable quantities of foreign and artificial silk are imported by Siamese weavers, and there is no reason why Siam should not supply its own demands. The greatest need is for improved methods of taking the silk from the cocoons and of handling it: the technique in use has been unchanged for centuries.

TABLE I. A.

Farming Costs.

NORTH-EAST SIAM.

REGION	Equip. Purchase and Upkeep	Equip. and Animal Hire	Trans- port of Crops	Labor Hire	Farm Taxes	Annual Farm Costs	Invested in Farm Equip- ment
Nongkai	0.35	0.38	..	1.26	0.09	2.08	1.80
Udon	0.59	0.02	0.23	..	..	0.84	..
Khonkaen ..	0.71	0.36	0.08	1.43	2.32	4.90	1.40
Pu Vieng ..	0.72	0.34	0.23	1.09	1.13	3.51	0.88
Sakolnagor ..	0.53	1.02	0.03	0.22	..	1.80	0.20
Ubol	0.41	0.66	..	0.67	3.19	4.93	0.55
Khukan	0.24	0.21	..	..	2.39	2.84	..
Nag. Rajasima ..	0.77	0.93	0.13	0.93	3.00	5.76	0.20
Average North-east ..	0.54	0.49	0.09	0.70	1.51	3.33	0.63
Percentages North-east ..	16.19	14.75	2.58	21.06	45.42	100%	(18.85%)

TABLE I. B.

Farming Costs.

SOUTH SIAM.

BEGION	Equip. Purchase and Upkeep	Equip. and Animal Hire	Trans- port of Crops	Labor Hire	Farm Taxes	Annual Farm Costs	Invested in Farm Equip- ment
Naradhivas ..	0.49	..	..	..	1.37	1.86	..
Pattani	0.34	1.19	..	0.10	1.07	2.70	..
Songkla	1.09	0.50	..	2.42	1.52	5.53	..
Trang	0.49	1.34	0.59	1.87	1.28	5.57	..
Nag. Sridhamaraj	0.45	1.40	..	..	2.56	4.41	0.40
Surat	0.57	0.46	..	0.60	4.87	6.50	..
Jumbor	0.47	0.69	0.11	2.07	0.92	4.26	..
Average South	0.56	0.80	0.10	1.01	1.94	4.41	0.06
Percentages South	12.66	18.08	2.28	22.94	44.04	100%	(1.30%)

TABLE I. C.

Farming Costs.

NORTH SIAM.

REGION	Equip. Purchase and Upkeep	Equip. and Animal Hire	Trans- port of Crops	Labor Hire	Farm Taxes	Annual Farm Costs	Invested in Farm Equip- ment
Chang Puak (Chiengmai) ..	0.24	0.43	..	0.99	1.44	3.09	0.58
Mae Hiah (Chiengmai) ..	0.69	0.86	..	1.42	2.43	5.39	0.30
San Mahapon (Chiengmai) ..	0.84	1.67	0.05	3.73	3.61	9.91	..
Lampun ..	0.66	1.10	0.12	0.87	1.86	4.61	1.40
Na Kuam (Lampang) ..	0.70	0.87	0.10	2.06	2.14	5.87	1.25
Ban Sadej (Lampang) ..	0.21	0.28	..	1.26	1.26	3.01	..
Chiengrai ..	0.28	1.01	0.19	3.02	1.81	6.31	0.40
Chiengsen ..	0.37	0.79	0.21	4.41	3.51	9.29	1.34
Pa Daeng (Prae) ..	0.31	0.97	0.53	0.19	1.02	3.02	..
Mae Kami (Prae) ..	0.25	1.47	0.51	1.27	2.20	5.70	..
Laplae ..	0.88	0.76	0.07	20.06	2.04	23.81	..
Average North	0.49	0.93	0.16	3.57	2.12	7.27	0.48
Percentages North	6.79	12.76	2.22	49.09	29.14	100%	(6.58%)

TABLE I. D.

Farming Costs.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Equip. Purchase and Upkeep	Equip. and Animal Hire	Transport of Crops	Labor Hire	Farm Taxes	Annual Farm Costs	Invested in Farm Equipment
Bangkok ..	3.91	0.34	0.01	9.72	7.77	21.75	..
Nontaburi ..	6.76	0.11	0.18	37.73	35.02	79.81	..
Chazerngsao ..	4.04	1.60	0.23	26.20	15.27	47.34	..
Dhanyaburi ..	7.74	2.28	0.12	28.84	14.58	53.56	0.48
Ayuthia ..	3.27	0.67	0.74	38.45	16.23	59.36	0.75
Lopburi ..	1.35	1.08	2.62	12.00	7.57	24.62	..
Saraburi ..	0.74	0.03	0.23	8.29	9.23	18.52	1.70
Supanburi ..	2.64	0.28	2.40	6.80	12.82	24.94	0.33
Uthai Dhani ..	1.65	0.74	0.11	8.69	6.84	12.53	1.88
Pitsanulok ..	1.53	1.28	0.06	1.93	4.91	9.71	..
Bejraburi ..	0.85	0.99	0.11	12.44	4.83	19.21	0.13
Average Central ..	3.13	0.85	0.62	16.92	12.23	33.76	0.43
Percentages Central ..	9.00	3.00	2.00	50.00	36.00	100%	(1.00%)
	CHANTABUN.						
Ta Mai ..	169.50	0.90	1.53	105.26	3.77	280.95	1.38
Klong Naraya ..	1.78	1.45	..	6.50	3.44	14.07	1.88

TABLE II. A.

Income from Crops.

NORTH-EAST SIAM.

REGION	Non-Glut. Rice	Glut.-Rice	Coco-Nuts	Betel Nut	Sera Leaf	Tobacco	Rubber
Nongkai .. ..	..	1.90	0.76	0.37	2.03	..	..
Udorn	0.12	1.21	..	..	0.31	..	..
Khonkaen	0.10	8.69	0.01	..	0.05	..	..
Pu Vieng	0.46	3.11	0.14	..	0.02	0.30	..
Sakolnagor	0.03	1.23	..	..	..	..	..
Ubol .. ..	..	1.41	0.43	0.37	0.17	0.37	..
Khukan	0.19	0.18	0.01	0.02	0.10	0.23	..
Nag. Rajasima ..	15.71	0.15	0.01	0.67	..	0.01	..
Average North-east ..	2.08	2.23	0.17	0.18	0.34	0.11	..
Percentages North-east ..	26.81	28.84	2.19	2.32	4.35	1.47	..

TABLE II. A.—(contd.).

Income from Crops.

NORTH-EAST SIAM.

REGION	Cotton	Pepper	Vegetables	Fruits	All Other	Total Income from Crops
Nongkai .. .. .	..	0.01	1.41	2.06	0.14	8.68
Udon .. .. .	..	..	1.18	2.80	0.34	5.96
Khonkaen .. .. .	..	..	3.47	0.40	0.26	12.99
Pu Vieng	0.08	..	0.39	0.04	0.12	4.66
Sakonagor .. .. .	..	..	0.06	..	..	1.32
Ubol	0.01	..	2.55	0.53	0.34	3.88
Khukan .. .. .	..	..	0.52	0.01	..	1.25
Nag. Rajasima .. .. .	..	..	4.97	1.16	0.51	23.19
Average North-east	0.01	..	1.53	0.87	0.21	7.74
Percentages North-east	0.13	0.01	19.79	11.32	2.76	100%

TABLE II. B.

Income from Crops.

SOUTH SIAM.

REGION	Non-Glut. Rice	Glut.-Rice	Coco-Nuts	Betel Nut	Sera Leaf	Tobacco	Rubber
Naradhiyas ..	0.92	..	3.12	0.76	..	0.10	0.70
Pattani	4.19	..	2.02	0.16	..	0.07	0.03
Songkla	0.56	..	4.82	0.28	1.35	0.93	..
Trang	7.81	0.96	0.80	6.18	..	..	2.48
Neg. Sridhamaraj	0.82	..	0.56	2.51	0.38	..	..
Surat	2.47	0.05	3.87	3.76	0.03	..	..
Jumbor	1.86	0.27	0.93	0.05	..	..	..
Average South	2.66	0.18	2.30	1.95	0.25	0.16	0.46
Percentages South	14.99	1.03	12.98	11.00	1.41	0.88	2.58

TABLE II. B.—(contd.).

Income from Crops.

SOUTH SIAM.

REGION	Cotton	Pepper	Vegetables	Fruits	All Other	Total Income from Crops
Naradhivas .. ..	..	..	3.34	1.30	0.03	10.27
Pattani .. .. .	..	..	4.62	9.29	0.45	20.83
Songkla .. .. .	..	..	12.28	5.28	1.26	26.75
Trang .. .. .	..	..	1.12	1.63	0.25	21.23
Nag. Sridhamaraj ..	..	0.01	0.36	1.41	0.08	6.12
Surat	0.01	..	10.61	11.32	0.49	32.60
Jumbor .. .. .	..	..	0.11	1.51	1.75	6.48
Average South .. ..	..	..	4.63	4.54	0.62	17.76
Percentages South	0.01	0.01	26.10	25.55	3.46	100%

TABLE II. C.

Income from Crops.

NORTH SIAM.

REGION	Non-Glut. Rice	Glut.-Rice	Coco-Nuts	Betel-Nut	Sera-Leaf	Tobacco	Rubber
Chang Puak (Chiengmai) ..	..	3.79	..	..	0.02	..	..
Mae Hiah (Chiengmai) ..	..	9.49	..	..	0.04	..	..
San Mahapon (Chiengmai) ..	0.06	12.67	0.10	0.25	0.58	5.31	..
Lampun ..	1.22	5.40	..	0.12	0.09	0.13	..
Na Kuam (Lampang) ..	..	2.07	0.01	..	1.05	0.75	..
Ban Sadej (Lampang) ..	..	1.69	..	..	..	0.01	..
Chiengrai ..	0.91	7.42	0.42	..	..	0.28	..
Chiengsen ..	0.25	10.48	0.09	0.20	0.65	7.60	..
Pa Daeng (Prae) ..	..	3.56	1.11	1.44	0.16	1.39	..
Mae Kami (Prae) ..	0.24	16.65	..	..	0.26	0.12	..
Laplae ..	0.34	1.44	0.83	3.85	1.70	..	..
Average North	0.28	6.79	0.23	0.53	0.41	1.42	..
Percentages North	1.47	35.76	1.21	2.79	2.16	7.48	..

TABLE II. C.—(contd.).

Income from Crops.

NORTH SIAM.

REGION	Cotton	Pepper	Vegetables	Fruits	All Other	Total Income from Crops
Chang Puak (Chiengmai) .. ..	..	..	..	0.01	0.08	3.90
Mae Hiah (Chiengmai) .. ..	..	..	..	0.03	1.80	11.36
Ban Mahapon (Chiengmai) .. ..	..	..	1.43	0.09	0.22	20.71
Lampon .. ..	..	..	0.93	0.35	0.05	8.29
Na Kuam (Lampang) .. ..	..	..	16.85	2.90	8.38	32.01
Ban Sadej (Lampang)	0.03	..	1.45	0.41	0.33	3.92
Chiengrai .. ..	..	..	0.71	0.34	0.07	10.15
Chiengsen .. ..	..	..	0.84	0.22	0.16	20.49
Pa Daeng (Præ)	0.11	..	0.46	0.71	16.26	25.20
Mae Kami (Præ)	0.05	..	0.07	0.33	0.12	17.84
Laplae .. ..	..	..	0.83	41.15	4.87	55.01
Average North	0.02	..	2.14	4.23	2.94	18.99
Percentages North	0.11	..	11.27	22.27	15.48	100%

TABLE II. D.

Income from Crops.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Non-Glut. Rice	Glut. Rice	Coco-Nuts	Betel Nut	Sera Leaf	Tobacco	Rubber
Bangkok ..	35.12	1.29	3.49	6.90	..	..	..
Nontaburi ..	..	..	1.88	5.39	0.65	..	..
Chaxerngsao ..	59.99	0.50	1.51	6.24	2.08	..	..
Dhanyaburi ..	168.81	0.88	..	0.50	..	..	..
Ayuthia ..	191.81	0.80	..	1.77	1.77	..	..
Lopburi ..	85.84	..	..	..	..	..	..
Saraburi ..	61.07	0.22	..	..	0.02	..	..
Supanburi ..	84.55	0.05	..	..	0.35	0.25	..
Uthai Dhani ..	53.78	0.70	..	..	0.30	..	..
Pitsanulok ..	33.95	0.57	0.12	..	0.31	0.14	..
Bejraburi ..	79.77	0.55	..	..	..	..	..
Average Central ..	77.70	0.51	0.64	1.89	0.50	0.04	..
Percentages Central ..	73.67	0.48	0.61	1.79	0.48	0.04	..
CHANTABUN							
Ta Mai ..	3.00	..	0.10	0.38	0.50	..	6.05
Klong Naraya ..	16.77	0.86	0.45	4.81	0.46	..	5.60

TABLE II. D.—(contd.).

Income from Crops.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Cotton	Pepper	Vegetables	Fruits	All Other	Total Income from Crops
Bangkok	2.49	18.26	0.94	68.49
Nontaburi	154.49	0.05	162.46
Chazerngsao	0.68	0.06	13.38	0.09	84.53
Dhanyaburi	0.10	0.42	..	170.71
Ayuthia	1.38	3.31	1.83	202.67
Lopburi	24.87	5.06	1.89	117.66
Saraburi	1.03	5.16	1.42	68.92
Supanburi	0.02	..	4.20	11.17	0.33	100.92
Uthai Dhani	0.44	2.74	..	57.96
Pitsanulok	2.16	4.63	0.11	41.99
Bejraburi	0.25	3.16	0.09	83.82
Average Central	0.06	3.36	20.16	0.61	105.47
Percentages Central	0.06	3.19	19.11	0.58	100 %
	CHANTABUN					
Ta Mai	413.24	6.67	44.47	4.62	479.04
Klong Naraya	3.17	0.66	89.90	0.08	72.76

CHAPTER III.

FISHING.

INTRODUCTION.

Fishing is an occupation second only to agriculture in importance to the Siamese people. The great bulk of the population eats fish in one form or another every day, and derives from fish the only important protein element in its diet: it cannot give up the use of fish as a food without grave consequences to health and vitality. Exports of fish and salt from Siam to other countries amount to the appreciable figure of from two to four million Baht per year.

Many communities and households living on the coasts of Siam derive nearly the whole of their incomes from fishing and closely allied occupations. The same is true of many households living on the banks of the great inland rivers. The primarily agricultural people of the inland areas devote a considerable part of their time and energies to the catching of fish for household use and, even in regions where the waterways are very small, some families are able to catch and sell enough fish to add appreciably to their incomes.

The quality of the fish supply,—both in marine and inland waters,—is excellent: it is not excelled by that of any other tropical country. The available marine fish supply is very great and appears likely to remain so. The quantity of fresh-water fish is adequate today but is in danger of depletion.

Unfortunately, as mentioned in the Introduction to this report, the data collected by the Survey are not adequate for a full understanding of the economic importance to Siam of the fisheries. The picture given by the data is probably satisfactory for the North-east and the North, considerably less so for the Center and the South-east, and almost wholly inadequate for the South.

Nearly all households in the North-east do some fishing for their own use, and there are few communities which may be termed true "fishing villages" save along the banks of the Mekong river. The Survey studied one village on the Mekong,—that near Nongkai,—which derived a considerable income from fishing, and eight inland villages. The data may be considered as approximately satisfactory in the picture which they give of North-eastern fishing.

North Siam is an area which, from the standpoint of fishing, is much like the North-east except that there are no rivers which approach the size of the Mekong, and very few if any true fishing villages. The communities studied by the Survey probably give a fair picture of fishing in the North.

In Central Siam,—especially along the coast, and to a lesser degree on some of the bigger rivers,—there are true fishing villages which make a primary occupation of fishing. None of these fishing villages were studied, because it was the primary aim of the Survey to acquire information concerning the agricultural population. Taking Central Siam as a whole, the income derived from fishing is doubtless nearer to five or even ten percent of the total annual income than to the 1.38% indicated by the Survey data. Much the same statement applies to South-east Siam as a whole.

The coastline of South Siam is extremely long as compared with its area, and all along the coast there are important fishing villages. For the same reasons which applied in the Center no true fishing villages were studied here. One is justified in supposing that the income from fishing and allied occupations in South Siam must come closer to from fifteen to twenty five percent of the total than to the 3.13% indicated by the data.

It must not be supposed that the admitted inadequacy of the data makes them wholly valueless even in those areas where they are of least worth. Though they fail to give us a just idea of the relative importance of fishing in several areas, they do tell us something about the nature of fishing costs and income in those areas. Let us examine them.

COSTS OF FISHING.

We must consider the costs of fishing under several headings, and we will find that they are not the same in character in fresh and marine waters.

In marine waters boats are considerably used: they are of varying sizes, most if not all are planked, and their construction calls for some skill in carpentry. Some fishermen build their own, but the larger boats are usually bought from skilled boat builders. Traps and nets are generally made by the fishermen who will use them, and the materials which go into their construction can usually be obtained in the nearby jungle. Bamboo is the most important material: it is used for the framework of all sorts of barriers and heavy traps and, in thin strips, it is woven into almost innumerable varieties of small traps and baskets. Rope is sometimes made from available vegetable fibres, and is sometimes bought. Tar, for preserving and waterproofing boats, traps, and nets can be obtained from "yang" (*Dipterocarpus*) trees. Salt, which is needed to preserve the catch, is obtained by evaporation of salt water in communities which specialize in this occupation: the fishermen buy it from them. Taxes on boats and apparatus are levied by the government. Payment must often be made for the privilege of fishing at certain desirable sites along the tidal river banks. Some types of fishing require the combined energies of groups of men and thus, sometimes, labor is hired. Payment, however, is almost invariably a percentage of the catch; and it is not often reckoned by the fisherman and can rarely be appraised in Baht values. As in the case of farming the labor performed by the fisherman and his family cannot be evaluated in terms of money.

In the inland waters boats are little used for fishing, and those which are in use are simple dugout or composite canoes. They cost little if bought, and are almost always made by the men who plan to use them. Apparatus is of the same type as in marine waters but, except on the very large rivers, rarely includes extensive stake and barrier traps. A much larger proportion of small traps is used than in marine waters, and nearly all of these can be home made. Fish hooks and twine are almost always bought in all parts

of the country; and in Central Siam a fair amount of other apparatus is bought instead of being made at home. Many regions, especially in the North-east, obtain their own salt from dessicated basins and marshes in which, presumably, the receding seas of earlier geologic periods were caught, concentrated by slow evaporation, and finally dried up. The process of obtaining the salt is described in the chapter on "Handicrafts". In most parts of the North and Center salt is bought from the salt-producing communities of the seacoast.

Taxes on boats and apparatus, and payments for fishing site privileges, are rarely of great importance in the interior except along the banks of the great rivers and, in the case of privileges, on the small streams which serve as outlets to ponds and marshes. On these small streams the government grants monopolies to individuals; and these stretch barriers or seines across the flow and catch all the fish which cannot get through the mesh. This practice brings in a small amount of revenue to the government, but it is extremely destructive and will ultimately result in a significant depletion of the fish supply. Attempts to mitigate the destructive nature of the operation by setting legal limits to the size of the net mesh which may be employed are not satisfactory. It is impossible to enforce these regulations.

The bad effect of these operations is caused by the fact that the fish go into the ponds and swamps to breed when the dry season comes on and the fields are dry. When the rains begin to flood the fields the fish spread from the ponds and swamps to the rivers and fields: if they are prevented from doing this the fish supply is cut off and destroyed at its source.

In the present analysis of the data, the various costs of fishing are classified only as "Annual Expenditure for Fishing" and "Investments for Fishing". The latter category is intended to include expenditures for boats apparatus, and sites which are available for many years to the purchasers. In practice it was found impossible in many cases to decide whether some of the traps should be regarded as investments or as annual purchases: in case of doubt they were considered in the annual expenditure class. Investment, therefore, in this analysis, is primarily for boats and long-term fishing site privilegea.

The divisional figures for fishing costs show us the following:

DIVISION	Annual Expenditure for Fishing	Investments for Fishing
North-east	1.01	1.11
South	0.35	0.32
North	0.11	0.06
Center	1.65	0.66

These figures do little more than show us that the costs of fishing are indeed low among the primarily farming population. They are relatively high for the North-east, and this is because of the inclusion in the Survey of one North-eastern community which went in for fishing on a fairly extensive scale. They are low for *farmers* of the North and South, as might be expected: these farmers fish almost wholly for their own consumption. The data do not tell us what the fishermen of the South may spend. The figures for the Center are fairly high, because the farmers of that area have so far commercialized their rice production that they have practically stopped making fish-traps etc. even for their own use.

The regional data are presented in the tables at the end of this chapter.

In the North-east we find that the village near Nongkai spends a relatively large amount for fishing. It is on the bank of the Mekong river, consists chiefly of relatively well-to-do retired farmers, craftsmen, and fishermen, and makes use of seines and very large basketry fish traps which are generally made by specialists. The community is close by the Changvad market, and finds a ready sale for fish.

The Khonkaen village, surprisingly, spent a good deal for this purpose in 2476. The streams nearby were very small in the dry season when the Survey Party worked there. The population of this village did better with its crops in 2476 than any other North-eastern Lao community studied, and we must assume that they make very full use of their opportunities for fishing in the wet season.

Data from the other North-eastern communities need occasion no surprise save in the case of the Ubol community which, probably, could make better use of its opportunities for fishing. A reason for its apparent failure to do so may be that fish are available at low cost from the nearby villages on the Menam Moun.

The Nagor Rajasima community does little fishing: it specializes in the production of non-glutinous rice for the Changvad center and for export.

In the South we find that fishing costs are almost unbelievably low except in the Jumbor community. All of the districts studied are fairly near to good fish supplies, and we must assume that most of them bought their fish at little cost from the fishing villages of the nearby seacoast. The relatively high expenditures for food in these communities bear out this assumption.

The crops in the vicinity of Jumbor have been very bad for a number of years past, and the people have turned more and more to fishing and other occupations as alternative sources of income. In the years between 2472 and 2476 income dropped in all categories and all villages with very few exceptions, but income from fishing seems to have held its own better than income from crops in those agricultural districts which have done the most fishing. In 2472 the Jumbor village's income from fish was 50% greater than its income from crops: in 2476, although the income from both sources was lower, fish brought in twice as much as crops. It is worth noting that this community is not on the coast, and cannot be regarded as a true fishing village: the success with which it has turned to fishing is proof of an opportunity which is available to many other districts.

In North Siam fishing costs are uniformly very low. The people fish almost wholly for their own consumption, and make all of their apparatus except fish hooks, twine, and salt. Even so, the costs for fishing are significantly higher than in the Southern agricultural communities with the exception of Jumbor. There probably are, in North Siam, a few villages which practise fishing on a more intensive scale than the villages studied by the Survey; but it is certain that their number is small.

In Central Siam most of the fishing is done in the wet season when the rice fields are flooded. Fishing is prohibited during a part of this time when the fish are reproducing, but the prohibition cannot be enforced to any significant degree.

The same fields in Central Siam which grow the rice provide the fish. In the dry season the people go on foot to work their fields: in the wet season they go to the fields in canoes, paddle through the tall rice stalks, and fish. The canals and rivers are fished to some degree in all seasons of the year when the people are not too busy in the fields, and the greater part of the fishing is done by women and children.

Fishing costs are relatively high in the communities of the intensively irrigated rice plains, because commercialized agriculture has made the people more ready to buy apparatus and less apt at making it. Much of what the Lao makes, the Thai buys.

In the South-east the fisheries are of high importance along the coasts: Klong Naraya and Ta Mai are, respectively, fruit and pepper communities which do little fishing save for home use.

INCOME FROM FISHING.

The most important income derived from fishing is, of course, the sales value of fish which are sold or bartered. A secondary source is the income earned by a few individuals who are engaged in handicrafts directly subsidiary to fishing. Such crafts are the making and repairing of boats and apparatus, the preservation of fish, and cordage making.

We will divide the income from fishing into these two categories,—that proceeding from fish sales, and that derived from secondary occupations. In the final analysis of rural income we will consider the secondary sources of fishing income as a handicraft but, for the moment, we will consider such earnings in their relation to fish sales.

The divisional averages per household, according to our data, are as follows:

DIVISION	INCOME FROM SALE OF			Income from Fishing Craft and Labor	Total Income from Fishing
	Fresh Fish	Preserved Fish	All Fish		
North-east	2.44	0.65	3.09	0.18	3.27
South	2.29	0.03	2.32	1.52	3.84
North	0.15	0.05	0.20	0.02	0.22
Center	2.28	0.27	2.55	0.12	2.67

When we consider these figures in comparison with the divisional averages for fishing costs which we have just examined,—North-east 1.01, South 0.35, North 0.11, and Center 1.65,—we notice that income from fishing is yearly about three times the cost in the North-east, about ten times the cost in the South, about double the cost in the North, and nearly double the cost in the Center. Fishing, evidently, is financially profitable even when it is done primarily to ensure a supply of fish for the household.

The regional data in the Tables at the end of this chapter show us that:

In the North-east, as is to be expected, it is the Nongkai village on the Mekong which derives the biggest income from fishing and allied occupations. There are plenty of fish in the river, and there is an important market nearby.

The Khonkaen village spent a good deal for fishing, and it received the next highest income from both phases of the fishing enterprise.

The Udorn, Sakolnagor, and Ubol communities come next on the list, event though that near Ubol spent extremely little for this purpose.

In the Pu Vieng, Khukan, and Nagor Rajasima districts fishing costs are higher than fishing incomes. The fish supply in these districts is small, and the people must spend a certain minimum for equipment in order to catch even enough fish for their own needs.

About a quarter of the fish sold in the North-east is sold in the preserved state, and about three quarters is sold fresh in spite of the fact that the fish is nearly always preserved before consumption by fermentation, salting, or drying. There are two important reasons for this,—one is that the fish caught in the wet season must be saved for use throughout the year in periods when little fish can be caught, and the other is that relatively small amounts of fish are actually consumed at each meal. The basis of the diet is rice, and a very little fish which has been fermented and mixed with salt, garlic, and chillies serves to give a high flavor to a large amount of rice. Most families perform the operation of transmuting their fish into a powerful condiment at home and according to their individual slightly varying recipes. The preserved fish which is so notable in the markets consists chiefly of special varieties of fish condiments and sauces of which the greater part is imported from coastal regions.

In the South we find that little fish is sold in our communities save in the case of that near Jumbor, and that little income is earned by subsidiary occupations save in the same village. Most of the Southern farming villages catch fish only for their own consumption, and sell or barter only such small surpluses as they may happen to have.

It is the data on fish sales which bear out our belief that the Jumbor community is not a true fishing village even though it now obtains an income from fisheries which is eleven times the expenditure for the same purpose and four times the income from agriculture. In the true fishing villages of the coast fish is caught on a large scale for export to other parts of Siam and to foreign countries. Before the fish can be sold, it must be preserved: none can be shipped fresh except from a few villages near to Bangkok and the railway. We find that the Jumbor fish was nearly all sold fresh, and this means definitely that it was for local consumption.

The Changvad market of Jumbor is a large one, and in the Changvad center there is a considerable Chinese population engaged in trade and other activities. Communication from the community studied to the Changvad center is by a well-surfaced road for the

greater part of the distance. It is certain that the availability of a big market which can be reached easily by motor lorry has played a large part in the development of fishing in the village. We shall see later that the same factor has led to other developments also.

In North Siam very little fish is caught for sale in the communities studied by the Survey. Diet habits are very much the same as those of the Lao of the North-east, and we find that about the same proportions of fresh and preserved fish are sold by fishermen of the North as by fishermen of the North-east. Income from fish sales is highest in San Mahapon where an important highway has developed a sizable market, and where a fairly large river is near the market.

In Central Siam, also, very little fish was caught for sale in the agricultural communities studied by the Survey, and it is significant that some communities spent more for fishing than they obtained from fish sales. It has been said above that this proceeds, at least in part, from their commercialization of rice-culture and their abandonment of the old custom of making their own apparatus. Only about 10% of the fish was sold in the preserved state: the sales were all for local consumption.

The Bangkok, Dhanyaburi, and Uthai Dhani communities seem to have sold more fish than the others. The first two supply Changvad markets which are within easy reach, and the latter is situated on a river which flows through a very dry section of the country. It is likely that the riverbank villages of this region supply a certain amount of fish to districts which lie farther away from good fish supplies: the fact that nearly half of the Uthai Dhani fish was preserved before being sold appears to confirm this supposition.

The data from the South-east call for no comment. They do not give any indication of the conditions in the important fishing villages of this area.

THE FUTURE OF SIAMESE FISHERIES.

The policy of the nation with regard to fisheries should follow three definite lines:

(1) In the inland regions of the North-east, the North, and the Center, steps should be taken to prevent the fresh-water fish supply from being exhausted.

(2) The marine fisheries should be expanded by the introduction of better techniques for the preservation and shipping of fish.

(3) Encouragement, and freedom from hampering regulations and taxes, should be extended to any private individuals who wish to inaugurate pond culture of food fishes.

The first of the three desiderata above can be realized if the recommendations of the Department of Fisheries receive the attention which they deserve and are carried out.

It is of the utmost importance from the standpoint of health and vitality that the inland people should not be forced to forego the fish which is practically the only source of protein in their diet. Most of the fish caught inland are very small: they swim through the rice fields in the wet season, and are forced into puddles and swamps in the dry season. At the outlets to the swamps, and in nearly dry canals and buffalo wallows, it is very easy to catch these fish in considerable quantity, and there is real danger that the number destroyed in this way will soon be such that the supply will be seriously depleted.

The government has already taken steps to prevent this from happening, and has established reserve swamp and pond areas in which the use of traps and nets is forbidden. The number of these reserves should be increased, even though they may individually be small in size; and new ones should be established in places where it is most likely that effective supervision will be possible. Two or three small but really well supervised reserves in the North-east, two or three in the North, and two or three in the Center, will be of more actual value than necessarily ineffectual attempts to enforce general prohibitions on the country people at large. The practice of granting permission to individuals to monopolize the fish outlets of the swamps should be discontinued: it will not be possible to prevent fish being caught at such places, but, by making the practice illegal, it will be possible to lessen the wholesale destruction which now takes place at the most important sites.

Another phase of the same problem must be careful surveying and safe-guarding of swamps in the same three inland areas. These swamps are yearly growing smaller and smaller as the farmers encroach on them to grow rice, and it is essential that they should be preserved if the fish supply is not to die out. It would not be a very difficult matter to survey the most important swamps and establish legal boundaries within which farmers may not grow rice. Enforcement of this regulation would be much easier to achieve than enforcement of specific fisheries prohibitions: it would be handled by the local officials of the amphurs where the swamps were surveyed. If the swamps are maintained at their present dimensions, and if a few reserves are available where the actual catching of fish is supervised, the fish supply in the swamps can be replenished from the reserves when necessary.

This problem of maintaining a general fish supply in the inland regions is important. The people cannot now afford to buy the fish which they urgently require and, even if they could, it is undesirable that they should be forced to do so. Too great specialization,—requiring the purchase of all save one or two commodities,—has placed the farmers of the Central klong regions in a situation which was very vulnerable when rice prices fell. Local fish supplies should be maintained so that crop failures will not make it impossible for the people to eat fish.

The marine fisheries should be expanded by the introduction of better techniques for the preservation and shipping of fish.

Pla daeng is today imported from the Dutch East Indies in spite of the fact that the same fish is abundant in Siamese waters.

Dried fish from marine waters is today a commodity of such importance to the Siamese people that it is transported by human carriers through inland regions where other methods of transport have not yet been made possible. The market for dried fish is huge today: when good roads have led to the opening of markets and stimulation of trade in all parts of rural Siam the demand for dried fish will enormously increase. Artificial drying might be introduced with profit in order to improve and standardize the quality of the fish.

Some marine fish are canned today for inland use. The product is often very good, but is said to vary greatly. The industry has only recently been established, and will have to profit by experience: there is no doubt that it is capable of great expansion. Canned fish from foreign countries is sold today in every market of rural Siam, and the same factors which will expand the market for dried fish will do the same for canned fish. If a glass industry is ever established in Siam, (the raw materials for it are available), it may be that it will be possible to ship the better quality fish in glass jars instead of in tins.

Fresh fish is little eaten by Siamese of the inland, but the demand for it is increasing. In the cold season it is taken by rail even as far inland as Khonkaen from the seacoast, and it finds a ready sale. The supply brought by the train to Khonkaen is sold out within a few hours of the arrival of the train. It may be possible for the railways to experiment with inexpensive ways of transporting fish in cold storage.

There is in the Gulf of Siam an abundance of sharks. Private industries have been developed in occidental countries to exploit the shark, and have found the process highly profitable. The skins supply an excellent grade of leather, the fins are eaten, the internal organs are used in the manufacture of medicines, and the remaining flesh and bones are dried, ground up, and used for fertilizer. The industry is one which, to be profitable, must catch sharks in quantity and must do so in an efficient way: it must also provide for the prompt utilisation of the whole shark by technical methods which might not today be used by Siamese fishermen. Since the industry cannot be started by Siamese, it is one which should be encouraged if any foreign firms desire to establish it and employ Siamese labor. It is only in this way that Siam will ever be able to use its sharks and, after a few years, there might be enough experienced Siamese operators to engage in this field on their own account.

Pond culture of fresh-water vegetable-eating fish is a source of very high income in Kwangtung Province of China. In that province, it is said, the annual income of the operators amount to about forty million Baht,—nearly half the government revenue of

Siam. This is a field of endeavor which might, certainly, be embarked upon with great success in Siam.

Some Chinese near Bangkok now raise fish in ponds for sale to the Chinese residents of Bangkok. They do so at a profit. The policy of the nation should be to encourage private individuals to embark on this enterprise by refraining from hedging them about with prohibitions and taxes until the business is on a profitable basis.

Pla kadi, *Pla salid*, *Pla ret*, *Pla nuan chan*, and many other Siamese fish live on vegetable organic matter growing in ponds, and some of these could certainly be developed in this way. Fish like *Pla chon* which live by eating other fish could not be raised in this way, as it would be too expensive to feed them.

We may conclude this chapter by reminding the reader that the Department of Fisheries has for a number of years benefitted by the services of an internationally famous fisheries expert, and that it has on its staff a number of Siamese officials whose training and high purpose ensure that the Department's recommendations with regard to the development of Siamese fisheries will be such as to merit the very serious consideration of the government and of patriotic Siamese.

TABLE III. A.

Annual and Capital Expenditures for Fishing.

NORTH-EAST SIAM.

REGION	Annual Costs of Apparatus, Fishing Taxes, etc.	Invested in Boats for Fishing, etc.	(Income derived from Fishing as detailed in following Tables)
Nongkai	2.96	6.28	(10.33)
Udon	0.88	..	(4.12)
Khonkaen	1.65	1.57	(5.65)
Pu Vieng	0.88	..	(0.07)
Sakolnagor	1.04	0.90	(3.81)
Ubol	0.22	0.10	(1.95)
Khukan	0.28	..	(0.12)
Nag. Rajasima	0.14	..	(0.06)
Average North-east	1.01	1.11	..

TABLE III. B.

Annual and Capital Expenditures for Fishing.

SOUTH SIAM.

REGION	Annual Costs of Apparatus, Fishing Taxes, etc.	Invested in Boats for Fishing, etc.	(Income derived from Fishing as detailed in following Tables)
Naradhivas	0.04	..	(0.03)
Pattani	0.02	..	(0.89)
Songkla	0.05	..	(0.27)
Trang	0.09	..	..
Nag. Sridhamaraj	0.03	..	..
Surat	0.09	0.28	(1.14)
Jumbor	2.14	1.94	(24.58)
Average South	0.35	0.32	..

TABLE III. C.

Annual and Capital Expenditures for Fishing.

NORTH SIAM.

REGION	Annual Costs of Apparatus, Fishing Taxes, etc.	Invested in Boats for Fishing, etc.	(Income derived from Fishing as detailed in following Tables)
Chang Puak (Chiengmai)	0.04	..	..
Mae Hiah (Chiengmai)	0.01	..	..
San Mahapon (Chiengmai)	0.07	..	(1.23)
Lampun	0.06	0.52	(0.13)
Na Kuam (Lampang)	0.21	..	(0.18)
Ban Sadej (Lampang)	0.07	..	(0.07)
Chiengrai	0.19	..	(0.62)
Chiengsen	0.04	0.15	(0.07)
Pa Daeng (Prae)	0.10	..	(0.01)
Mae Kami (Prae)	0.09	..	(0.04)
Lapiae	0.35	..	(0.08)
Average North	0.11	0.06	..

TABLE III. D.

Annual and Capital Expenditures for Fishing.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Annual Costs of Apparatus, Fishing Taxes, etc.	Invested in Boats for Fishing, etc.	(Income derived from Fishing as detailed in following Tables)
Bangkok	4.08	1.84	(6.12)
Nontaburi	1.45	0.20	..
Chaxeragsao	1.81	1.16	(1.25)
Dhanyaburi	2.56	2.66	(5.88)
Ayuthia	2.43	1.13	(1.62)
Lopburi	2.76	..	(2.86)
Saraburi	0.17	0.04	(0.22)
Supanburi	0.62	..	(0.19)
Uthai Dhani	0.99	..	(7.98)
Pitsanulok	0.88	0.05	(2.97)
Bejraburi	0.37	0.13	(1.22)
Average Central	1.65	0.66	..
		CHANTABUN	
Ta Mai .. .. .	..	0.28	..
Klong Naraya .. .. .	..	0.56	(0.97)

TABLE IV. A.

Income derived from Fishing.

NORTH-EAST SIAM.

REGION	INCOME FROM SALE OF			Income from Fishing Crafts and Labor	Total Income from Fishing
	Fresh Fish	Preserved Fish	All Fish		
Nongkai	7.15	2.33	9.48	0.85	10.33
Udon	3.97	0.15	4.12	..	4.12
Khonkaen	3.41	1.84	5.25	0.40	5.65
Pu Vieng	0.03	0.04	0.07	..	0.07
Sakonagor	3.11	0.69	3.80	0.01	3.81
Ubol	1.75	0.15	1.90	0.05	1.95
Khukan	0.07	..	0.07	0.05	0.12
Nag. Rajasima	0.01	..	0.01	0.05	0.06
Average North-east	2.44	0.65	3.09	0.18	3.27
Percentages North-east	78.96	21.04	100%	..	..

TABLE IV. B.

Income derived from Fishing.

SOUTH SIAM.

REGION	INCOME FROM SALE OF			Income from Fishing Crafts and Labor	Total Income from Fishing
	Fresh Fish	Preserved Fish	All Fish		
Naradhivas	0.03	..	0.03	..	0.03
Pattani	0.54	..	0.54	0.35	0.89
Songkla	0.27	..	0.27	..	0.27
Trang .. .. .	..	..	..	..	..
Nag. Sridhamaraj ..	..	..	..	..	..
Surat	0.01	..	0.01	1.13	1.14
Jumbor	15.16	0.25	15.41	9.17	24.58
Average South	2.29	0.03	2.32	1.52	3.84
Percentages South	98.71	1.29	100%	..	..

TABLE IV. C.

Income derived from Fishing.

NORTH SIAM.

REGION	INCOME FROM SALE OF			Income from Fishing Crafts and Labor	Total Income from Fishing
	Fresh Fish	Preserved Fish	All Fish		
Chang Puak (Chiengmai) .. ..	..	..	..	..	..
Mae Hiah (Chiengmai) .. ..	..	..	..	..	..
San Mahapon (Chiengmai)	0.91	0.08	0.99	0.24	1.23
Lampun	0.11	0.25	0.13	..	0.13
Na Kuam (Lampang)	0.18	..	0.18	..	0.18
Ban Sadej (Lampang)	0.04	0.03	0.07	..	0.07
Chiengrai	0.33	0.29	0.62	..	0.62
Chiengsen	0.04	0.03	0.07	..	0.07
Pa Daeng (Prae)	0.01	..	0.01	..	0.01
Mae Kami (Prae)	0.04	..	0.04	..	0.04
Laplae .. ..	..	0.08	0.08	..	0.08
Average North	0.15	0.05	0.20	0.02	0.22
Percentages North	75.00	25.00	100%	..	..

TABLE IV. D.

Income derived from Fishing.

CENTRAL AND SOUTH-EAST SIAM.

REGION	INCOME FROM SALE OF			Income from Fishing Crafts and Labor	Total Income from Fishing
	Fresh Fish	Preserved Fish	All Fish		
Bangkok	6.12	..	6.12	..	6.12
Nontaburi .. ..	..	..	..	..	..
Chaxerngsao	1.25	..	1.25	..	1.25
Dhanyaburi	5.77	0.10	5.87	0.01	5.88
Ayuthia	1.62	..	1.62	..	1.62
Lopburi	2.52	0.32	2.85	0.01	2.86
Saraburi	0.20	0.02	0.22	..	0.22
Supanburi	0.15	0.04	0.19	..	0.19
Uthai Dhani	5.09	2.19	7.28	0.70	7.98
Pitsanulok	2.23	0.32	2.55	0.42	2.97
Bejraburi	0.10	..	0.10	0.22	0.32
Average Central	2.28	0.27	2.55	0.12	2.67
Percentages Central	89.41	10.59	100%	..	..
	CHANTABUN				
Ta Mai .. ..	..	..	..	..	..
Klong Naraya	0.97	..	0.97	0.66	1.63

CHAPTER IV.

ANIMALS.

INTRODUCTION.

In what we may regard as the traditional Siamese economy, animals were never raised or owned because of the value of their meat, milk, or manure. Animals in Siam have been the field assistants of the farmers, the heavy machinery of the timber industries, and the motive power of the traders' caravans. Because of their great importance as servants, they have acquired an important secondary significance as the tangible evidences of wealth.

The farmer who owns much land must own many cattle if he intends to work his field himself. In times of prosperity the farmers invest their surpluses in cattle almost as heavily as they do in land: in times of depression the value of cattle more readily holds to a high level than does the value of rice land, so the farmers frequently liquidate their cattle before they do their land.

In relatively recent years Chinese traders, merchants, and laborers have infiltrated all parts of the country. With them they have brought their custom of eating pork, chicken, and duck, so we find today in all the market centers a development of hog and poultry culture which greatly in excess of that which must have obtained in times past.

In considering the transactions in animals which took place in 2476, we find ourselves obliged to divide them into two categories. In the first category we include those which involve animals whose purchase represents an investment and whose sale represents a liquidation of capital assets: in the second we include those which involve animals which cannot be considered in this way.

The animals whose purchase or sale will be considered as

capital transactions are bullocks, water-buffaloes, horses, elephants, and pigs. When a man buys any of the first four of these he is making a substantial investment, he expects the animal to serve him for a number of years, and he hopes that the use of the animal will ultimately repay him for his investment. It is clear that the first four animals mentioned above must be treated as "capital" animals. We include pigs arbitrarily in this category for reasons which will be discussed below.

The animals whose purchase and sale will be considered as annual transactions include all kinds of poultry. The only other domestic animals of rural Siam are dogs and cats: as they have no economic importance,—are not bought or sold by the farmers,—they are not included in our data.

The "*Capital Animals*" are distributed and used in Siam in the following ways:

Bullocks are used almost wholly for transportation. In all parts of Siam except certain districts of the South-east they are used for hauling carts, and are of great importance in transporting paddy from the fields to the mills, paddy boats, and middlemen. Occasionally a farmer who owns no buffaloes uses his bullocks for ploughing and general agricultural purposes but, since the fields are muddy or water covered at the time when they must be worked, the bullocks are not as satisfactory for this purpose as the water-buffaloes.

Shan and other traders use the bullocks in transporting merchandise,—either in bullock carts or in pack baskets which are slung across the animals' backs.

In South Siam bullocks are raised and kept for bull-fighting.

Most of the local beef sold in Siam is derived from bullocks. In former times this was unimportant, but the introduction of new food habits by foreign occidental and oriental peoples has created a demand for beef in Bangkok and in the larger market towns.

No milk producing breeds of cattle have been developed in Siam, although the cattle of India and East Africa which are very like the bullocks of Siam are kept almost wholly for their milk. Indians have brought a few of their milk cattle to Bangkok.

The absence of milk and dairy products from the Siamese diet appears to be the result of an ancient and very widespread habit throughout the Southern half of Eastern Asia. In Central Asia, and in the Northern half of Eastern Asia, dairy products are in some areas as important to the people as rice is to Siamese.

Concentrated tinned milk is used today in all the coffee shops of the market towns, and is imported from foreign countries. A very little fresh milk is available in Bangkok and Chiangmai from goats which are kept in the former instance by Indians, and in the latter by Europeans.

Water-buffaloes are used throughout Siam for agricultural work such as ploughing, harrowing, and the like. In parts of South-east Siam they take the place of bullocks as the haulers of carts.

In Central Siam, where most of the transport is by water, the water-buffaloes are far more important economically than the bullocks. Whole communities are submerged to a depth of from one to four feet of water in the rainy season, and the farmers are obliged to build pile-dwellings with inclined ramps for the cattle to sleep in. Bullocks can scarcely live under such conditions, but water-buffaloes thrive.

The meat of the water-buffalo is coarse and tough: it is rarely consumed except when the supply of bullock meat fails.

The milk of the water-buffalo is never used.

Horses are never used in Siam, to haul vehicles. In hilly regions, where transport by bullock cart is impossible, they are used as pack-ponies; and they are also of some importance to local officials and travellers as saddle animals.

Horses are most plentiful in the North-east: they are to be found quite widely in the North and in parts of the South-east. They are rare in Central Siam, and are uncommonly seen in the South.

The horse which we are describing is of small stature and is undoubtedly related to the ponies of the Mongolian and Central Asiatic steppes. Horses of Arabian and European breeds are found only in Bangkok where they are used for polo-playing and horse racing.

Elephants are of most importance in the timber industries. Infrequently they are used in transport of goods and people through

heavily forested jungle regions. Still less frequently they are put to hauling paddy on sledges: this happens only when a man owns an elephant and can find no more profitable employment for it.

Pigs are of the Chinese sway-backed breed. Their culture in Siam appears to be a very recent development and to have been brought to Siam by Chinese.

The injunction of Buddhism to refrain from taking life has prevented the Siamese from making much use of meat as a food, but the now ubiquitous Chinese demands pork and fowl. Many Siamese farmers, therefore, buy young porkers from itinerant Chinese traders, feed them for a year or two on rice pericarps and vegetable refuse, and then sell them back to the Chinese at a profit. Since the Siamese does not wish to take life he is prevented from butchering his own pork and so, after raising the pigs and selling them to Chinese, he must buy such pork and pork fat as he requires from a Chinese butcher.

Most of the pig breeding is done by Chinese, and it is this which gives them virtual control of the industry. Relatively few Siamese farmers have learned that it is better to supply food to a few large hogs in the hope that they will abundantly reproduce than it is to sell the fatted pigs for a fair profit and then be obliged to buy young porkers.

It is this factor which makes it impossible to consider pig purchases and sales as other than capital transactions. It does not often happen that a farmer buys and sells pigs in the same year so it is impossible to analyze hog raising on an annual basis as is done in other countries where pigs are sold every year and the annual expenditures are chiefly for hog foods.

"Non-Capital Animals" are found, in this study, to include only fowl; and of the fowl only the chickens and ducks are important.

In the relatively dry North-east and north the chickens are foremost in importance, in the wet Center and South-east ducks are most important, (chickens can hardly be raised at all in many parts of Central Siam because of the flooding in the wet season) and in the South there are about equal quantities of both.

There is good reason to believe that the Thai and Lao peoples had chickens before they had ducks,—it is possible that they were the first people to domesticate chickens,—and it is to be noted today that ducks are chiefly handled by Chinese while chickens are chiefly handled by Siamese.

The same prohibition which prevents the rural Siamese from killing pigs extends also to fowl in a somewhat lesser degree. Apparently it is not considered so heinous to kill a chicken as it is to slaughter a hog. Most rural Siamese sell their fowl alive to Chinese butchers and buy such meat as they can afford in the markets.

The farmers do consume a small amount of their own fowl's eggs, but most are sold to Chinese and the wealthier Siamese residents of the market centers.

INCOME AND EXPENDITURES ON ACCOUNT OF ANIMALS.

"Annual Expenditures" will include all costs of fowl, animal feed, and animal medicines. "Investments" include the costs of all bullocks, water-buffaloes, horses, and pigs bought.⁽¹⁾ "Annual Income" will include all sums obtained by the sale of fowl, eggs, and manure, and by the renting of farm animals to others. "Capital Sales" will include the amounts received from sales of bullocks, buffaloes, horses, and pigs.

The divisional data are as follows:

DIVISION	Annual Expend. for Animals	Invested in Animals	Annual Income from Animals	Capital Sales of Animals
North-east	0.14	2.04	0.48	2.47
South	0.13	0.81	1.45	6.63
North	0.48	3.02	0.57	4.03
Center	2.89	6.43	1.85	9.51

(1) No elephants were bought or sold in any of the communities studied by the Survey during 2476.

We see that, except in the Center, annual income from animals was considerably greater in 2476 than the expenditure. The cost of animals rented by the farmers for agricultural purposes could not, in the time available for this analysis, be separated from the "Farming Costs" and included here with the annual expenditure for animals. If this had been done, it is likely that we would have found an average loss on the annual transactions in all areas except the South.

We note also that, except in the South, considerably more was realized in 2476 by the sale of capital animals than was invested in them. We must examine the data in more detail in order to find out how much of this capital income represents liquidation of valuable farm animals and how much of it is due to sales of pigs.

The regional data are presented in the Tables at the end of this chapter.

In the North-east the annual expenditure was almost wholly for chickens. In a very few cases rice pericarps were bought to feed pigs.

Investments in the Nongkai region were chiefly in buffaloes. It appears that the poorer farmers of neighboring districts were obliged to liquidate them in order to meet their taxes and other expenses.

The Khonkaen and Sakolnagor communities bought a few buffaloes and bullocks, and invested almost the same amount in pigs.

The other North-eastern communities, including that near Nagor Rajasima, invested chiefly in pigs.

The annual income from animals in the North-east was almost wholly derived from the sale of chickens and, to a much smaller degree, the sale of eggs. Most of the farmers incubate their own eggs, or obtain eggs for incubation from their neighbors. The market for the sale of eggs was so limited that they sold at one satang apiece.

In a very few cases farmers were found who had gained a few Baht during the year by renting out their bullocks to others. No manure was sold, and very little of that produced was used.

Capital sales were most important in the Sakolnagor community which, apparently, was forced to liquidate its farm animals. Horses, buffaloes, and bullocks were sold to account for the major part of this income; and we may note in passing that there were no sales

in this village of land, buildings, treasure, or rice in stock. The village was poor, land values were so low that it was not worth while to sell land even if a buyer could be found, and all other capital assets had evidently been liquidated.

An interesting situation is found in the Pu Vieng region where, as noted in the introductory chapter, not one community but two were studied by the Survey Party. Twenty families were studied in a little village along the road between Khonkaen and Pu Vieng, and twenty were studied at Ban Srithan which was the most isolated village in which the Survey was made. In the former of these two communities,—Ban Rua,—communication, though bad, existed; and pigs were sold to Chinese traders. In Ban Srithan there was no sale for pigs and the farmers had to realize on their farm animals by driving them along jungle trails to a distant market town.

In the other North-eastern communities most of the capital sales consisted of pigs and did not involve liquidation of assets.

It is well worth noting that good fat hogs sold in the North-east for between ten and fifteen Baht apiece, while forced sales of bullocks and buffaloes often brought little more. In a few cases, horses were sold at even lower prices.

In the South annual expenditure for animals was almost wholly for rice pericarps which were used as feed for pigs. A very few fowl were bought. The data on Farming Costs, however, show that a number of Southern families had to hire buffaloes to work their fields, and this expenditure is not included here.

Investments for animals, in the South, were almost wholly in pigs. Of the two hundred and eighty Southern families studied only one had bought a buffalo and only one had bought a bullock. All other investments were in pigs.

Although so few fowl were bought during 2476, we find in the data on annual income from animals that a large number was sold; nearly all of this type of income came from poultry sales. Since so few fowl were bought and so many were sold we are justified in assuming that the Southern farmers have learned that it is better to breed their own fowl and incubate the eggs than it is to buy pullets.

Capital sales of animals show a considerable variation from region to region. In the Naradhivas, Songkla, and Nagor Sridamaraj villages there was a considerable amount of liquidation of valuable farm animals, but pig sales alone more than covered the cost of all animals. In the Trang community more cash was realized by the sale of pigs than by liquidation of cattle, in the Surat district very nearly all the capital income was from pigs, and in the village near Jumbor the capital sales of animals were 100% of pigs.

We have already had occasion to single out this village near Jumbor for special comment, and here we must do so again. In the past few years it has lost most of its income from crops, it was previously forced to liquidate most of its valuable assets, and we find that it has increased its fishing activities so that in 2476 it derived four times as much from fishing and allied occupations as from crops. Now that we turn to the animal transactions of the village we find that the average householder spent five satangs for young pigs and twenty satangss for pig feed during 2476, while he realized Baht 2.57 from the sale of poultry and Baht 9.69 from the sale of pigs. In other words, and if the year 2476 was typical, the average farmer of this village has learned how to earn about fifty times as much as it needs to spend by breeding, raising, and selling pigs and poultry. In 2476 the cost of the operation was only twenty five satangs and the income from it was twelve Baht. The community appears to have learned how to make hog and poultry culture profitable because crop failures forced it to find new sources of income. If this village can do it, others can: all that is needed is a nearby market in which the pigs can be sold.

In the North, except for the Laplae community, the variation in annual expenditure for animals is found to be an index of the development of hog culture. San Mahapon and one of the Lampang villages,—Na Kuam,—spent more under these categories than the others (except Laplae) and we find that the reason for this is that these two villages bought rice pericarps to feed pigs.

In all the Northern communities a small amount was spent for fowl and for eggs to be incubated during 2476.

The high figuré in the Laplae village is due to the presence

of one or two elephants whose various upkeep charges amount annually to a considerable sum. Curtailment of the activities of the timber industries has made it difficult to obtain profitable work for the elephants, and most of the owners would have been glad to sell them if they could have found buyers.

Capital expenditure for animals,—investments,—in the North were during 2476 about 50% for cattle and 50% for pigs. The pigs which are bought,—young ones,—cost individually only a small fraction of the cost of a buffalo or bullock, and we find that only a few families invested in cattle but that many bought pigs.

In San Mahapon, a village which has become relatively well-to-do as a result of its strategic position on the important highway between Chiangmai and Muang Fang, the balance of the investments was strongly in favor of cattle. The reasons for this,—since the community is more strictly a trading than a farming village,—appear to be that (1) cattle sold during 2476 at prices which made investment appear desirable, and (2) neighbouring farmers who were indebted to the traders for goods bought on credit in some cases paid off their debts by transferring ownership of cattle.

The annual income from animals in the North was derived almost wholly from the sale of fowl to the markets except in two cases. Na Kuam earned its annual income in this category by selling eggs to the Lampang market, and the Laplae village obtained its high average income by the rental of one elephants to the teak industries.

Rentals from cattle accounted for an insignificant part of the income except in Ban Sadej where, apparently, lowered incomes in the past few years have caused many farmers to sell their work animals and to come under the necessity of hiring them from others in order to work their fields.

About three quarters of the capital sales of animals in North Siam were of pigs. The only community which liquidated cattle to any significant extent was Na Kuam.

In the Center, except for Chaxerngsao, Dhanyaburi, and Uthai Dhani, the annual expenditure was almost wholly for fowl and eggs to be incubated.

In the Chaxerngsao and Dhanyaburi districts there were a considerable number of villagers who had developed pig-raising to a relatively high degree: by far the greater part of the annual expenditure was for rice pericarps to be used as pig feed.

Near Uthai Dhani a number of kidnappers appear to have operated in 2476. Fifty of the fifty-three satang average expenditure is traceable to a ransom of Baht 20.00 which one villager had to pay in order to regain a kidnapped water-buffalo.

The greater part of the investment in the Chaxerngsao district was for pigs, in that near Dhanyaburi the investment was about evenly divided between pigs and cattle, and in all the other Central communities the investment was primarily in water-buffaloes.

The average annual income from animals in the Dhanyaburi village was almost entirely the result of a single individual's operations. This man owned a large herd of water-buffaloes which he rented out to neighboring farmers who had none.

In the village near Bejraburi the same situation was found but the herd owner was operating on a much smaller scale.

During 2476 a number of cattle died from disease in the Pitsanulok district. The hides and horns were sold to account for most of the annual income from animals.

In the other Central communities the annual income proceeded almost wholly from sales of poultry and eggs to local markets.

Three quarters of the families studied near Chaxerngsao sold pigs in 2476. This accounted for all but Baht 1.50 of the high figure for average capital sales of animals.

In the Saraburi community there was a significant liquidation of water-buffaloes.

In the other Central communities capital sales were about evenly divided by pig sales and liquidation of work animals.

In the South-east we find that the fruit raising village of Klong Naraya made a small profit on transactions in fowl and pigs, while the pepper-raising district of Ta Mai dealt to so small a degree in animals that it spent more for labor to care for its animals than it realized by sales.

THE FUTURE DEVELOPMENT OF SIAMESE LIVESTOCK.

We have seen that the important economic animals of the Siamese farmers are cattle, pigs, and fowl. Elephants are important to the teak industries, but scarcely play any part in the lives of rural Siamese except when they are owned with the purpose of hiring them to the timber operators. Horses are important for transport in a few regions, but the average rural Siamese is a farmer and not a trader: to him the horse is of very secondary importance.

Cattle are the work animals of Siam and, as such, they must be conserved. It was pointed out in the report of the First Rural Economic Survey that the use of these animals should be encouraged and that, when it becomes financially possible, the farmers should be instructed in the ways by which cattle can be made to replace human labor when used with the proper machinery. The reason for this is that in a period of falling rice prices and general depression the costs of animal upkeep fall in proportion to commodity values, while the costs of human labor do not as readily keep to the level of general costs. Thus, when prices drop and the farmer gets small returns for his crops he is still able to buy animal foods and supplies at prices which fit his reduced income, but he is obliged to pay wages for human labor which are excessive in proportion to his lowered income. The more human labor a farmer is forced to employ, the more seriously he will be handicapped by a drop in income.

Most of the diseases which affect Siamese cattle appear to be fairly well known to veterinaries. Very little, however, has been done to make this knowledge available to Siamese farmers.

It would not be possible today to establish veterinary depots throughout rural Siam, but it would be possible to extend the practice of sending veterinaries with medicines to the districts which report serious epidemics to Bangkok. In time to come information concerning cattle diseases and general care should be disseminated through the Cooperative Societies in the same way which has been suggested for the spread of agricultural knowledge. The local Cooperative Societies of districts which are known to present cattle problems should be visited by veterinaries at the time of their regular

meetings, information should be given them, and the assistance of the local Cooperative Society inspector should be enlisted to make certain that those members who try to put into use the methods which they have learned should do so in the best practical way.

Sooner or later the demand for dairy products will be large enough in Bangkok and the bigger urban centers to warrant wider development of milk producing cattle and the establishment of small pasteurization plants. There are some regions of Siam which, doubtless, could be developed into excellent cattle areas if a better grade of forage grass is introduced. It has been suggested that the region between Ta Rua and Saraburi offers the best opportunities for this development. Beef cattle and dairy herds will some day be of real importance to the nation, and it is desirable that attempts should be made now to discover what types of forage grass seem best adapted to the country. The proper grass, if introduced at a number of places, should be able to spread naturally so that forage will be available when cattle culture shows signs of becoming profitable.

Pigs offer the Siamese farmers a profitable way to add to their incomes and to make use of the pericarps of their rice. In a number of regions they are already of real economic importance and the expansion of communication, leading to small markets and cookshops in all the rural districts, will greatly expand the demand for them. The Siamese should learn to breed their own hogs rather than to depend on Chinese traders for young ones. Failure of the Siamese to butcher their own hogs will not prove very disadvantageous until the Siamese themselves make more use of pork in their diet: the cookshops are operated by Chinese or Siamo-Chinese, and the proprietors will continue to buy their pork alive in any case as it is cheaper for them to do so.

Poultry, like pigs, will become more profitable when there are more markets and cookshops throughout the country. There is an adequate supply of fowl and eggs in most parts of Siam to-day: poultry raising is handicapped simply by a lack of markets and the general stagnation of trade.

TABLE V. A.

Transactions in Animals in 2476.

NORTH-EAST SIAM.

REGION	Annual Expend. for Animals	Invested in Animals	Annual Income from Animals	Capital Sales of Animals
Nongkai	0.28	4.27	0.22	1.00
Udon	0.27	1.22	0.59	0.75
Khonkaen	0.20	2.12	0.04	1.60
Pu Vieng	0.03	1.10	0.68	4.85
Sakolnagor	0.11	3.16	1.41	8.84
Ubol	0.08	1.38	0.61	0.92
Khukan	0.08	0.43	0.27	0.60
Nag. Rajasima	0.04	2.65	0.05	1.24
Average North-east	0.14	2.04	0.48	2.47

TABLE V. B.

Transactions in Animals in 2476.

SOUTH SIAM.

REGION	Annual Expend. for Animals	Invested in Animals	Annual Income from Animals	Capital Sales of Animals
Naradhiwas .. .. .	..	0.06	1.12	6.19
Pattani	0.04	..	0.77	..
Songkla	0.08	1.50	1.54	8.73
Trang	0.05	2.20	2.06	10.23
Nag. Sridhamaraj	0.10	0.92	0.37	2.18
Surat	0.45	0.95	1.70	9.39
Jumbor	0.20	0.05	2.57	9.69
Average South	0.13	0.81	1.45	6.63

TABLE V. C.

Transactions in Animals in 2476.

NORTH SIAM.

REGION	Annual Expend. for Animals	Invested in Animals	Annual Income from Animals	Capital Sales of Animals
Chang Puak (Chiengmai)	0.01	1.65	0.19	0.22
Mae Hiah (Chiengmai)	0.06	2.52	0.10	4.26
San Mahapon (Chiengmai)	0.52	6.27	0.20	1.96
Lampun	0.14	2.42	0.05	1.04
Na Kuam (Lampang)	0.38	8.79	1.74	18.30
Ban Sadej (Lampang)	0.03	0.40	0.97	0.66
Chiengrai	0.11	3.25	0.96	6.94
Chiengsen	0.11	4.43	0.21	7.56
Pa Daeng (Prae) .. .. .	..	1.37	0.01	0.65
Mae Kami (Prae)	0.01	1.40	0.16	2.67
Laplae	3.87	0.71	1.69	..
Average North	0.48	3.02	0.57	4.03

TABLE V. D.

Transactions in Animals in-2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Annual Expend. for Animals	Invested in Animals	Annual Income from Animals	Capital Sales of Animals
Bangkok	0.48	1.31	0.57	0.99
Nontaburi .. .. .	..	..	..	..
Chaxerngsao	21.15	29.71	0.29	50.29
Dhanyaburi	9.06	9.30	13.05	18.48
Ayuthia	0.03	5.53	0.09	0.35
Lopburi	0.06	1.30	0.59	1.69
Saraburi	0.34	8.20	0.90	12.80
Supanburi	0.02	5.51	0.33	1.67
Uthai Dhani	0.53	5.95	0.56	2.35
Pitsanulok	0.06	0.75	1.17	0.59
Bejraburi	0.08	3.23	2.76	9.34
Average Central	2.89	6.43	1.85	9.51
	CHANTABUN			
Ta Mai	2.35	0.85	0.07	..
Klong Naraya	0.04	1.76	1.64	1.60

CHAPTER V.

LAND AND BUILDINGS.

INTRODUCTION.

Land and buildings can scarcely be considered separately: their values are inextricably mingled and interdependent. This statement does not apply, or applies with little force, to actual farm land; but our study of rural Siamese communities obliges us to consider a certain amount of land which is built up and which is not used for agricultural purposes, so we must constantly consider the relationship between the land and the buildings which are or can be constructed on it.

In a strictly farming district,—such as those we find in the greater part of rural Siam,—the value of the land is principally determined by two factors:

- (1) The value of the crops which can be grown on the land, and
- (2) The availability of communication with districts which are able to buy the crops which may be grown.

In a self-subsisting agricultural community the second factor is of little importance: the farmers grow crops for their own needs and do not expect to sell much of their produce. In a commercialized agricultural community where the crops are raised primarily for sale, the second factor,—that of communication,—becomes almost or fully as important as the fertility of the land. It is clear that a farmer who raises crops for sale cannot afford to farm in a region where there is no opportunity for sale of his crops. It is this factor, in conjunction with others, which has played a large part in restricting agriculture in Central Siam so completely to rice: rice can be sold and taken out of the farming districts by the available means of communication while most other crops cannot.

In an industrial or commercial community,—in, for example, the cities and market centers of rural Siam,—the communication factor is far more important than fertility. The most valuable land for a trader is that which has the best communication with the farmers on one hand, and with bigger traders and distribution centers on the other. This is so because the trader must buy agricultural produce from the farmers and sell them other goods, and because he must sell agricultural produce to the distribution centers and buy from them commercial supplies.

Although it is not yet of importance in Siam, we may note that this principle is carried to its highest degree in the localities where commerce is most highly intensified. In the most highly commercial of all communities,—the business sections of great occidental cities,—the need for almost perfect communication leads to great concentration of trading in very small areas, buildings must be taller than they are broad, and the value of land is almost wholly determined by the value of the buildings which may be constructed on it.

The farmer or trader who needs to use land or buildings but who cannot afford to buy them, is obliged to rent them from others. In prosperous times both farmers and traders buy land and buildings with their surpluses: in financially bad times they are often obliged to sell them to cover their annual expenses. We must therefore consider both land and buildings from the standpoint of their rental values as well as from the standpoint of investments. Let us turn first to rentals.

LAND RENTALS.

The divisional data are as follows:

DIVISION	Land Rentals Paid	Land Rentals Received
North-east	0.23	0.23
South	1.26	1.22
North	2.06	2.53
Center	19.56	8.99

The close similarity between land rentals paid and land rentals received in the three self-subsisting areas may be taken as an indication that the divisional samples gave about equal representation to landlords and tenants. In other words, the "average farmer" whom we have been considering in the North-east, the South, and the North is as much a landlord as he is a tenant. Landlords and tenants in these rural areas are neighbors living in the same villages: the farmers of these areas are not to be regarded as tenants who are obliged to rent land from well-to-do residents of the urban centers.

Our data show that the farmers studied by the Survey in Central Siam paid much more for land rent than they received on the same account. This must mean, as in fact we know it does, that a considerable number of the land-owners of Central Siam are not farmers but are residents of the bigger urban centers which were not studied by the Survey.

We also note that the figures for land rentals are much higher in the Center than they are in the self-subsisting areas. This is because of the commercialization of agriculture, and the greater productive value which intensive irrigation has given to the rice-growing districts of Central Siam. Where land is of such value all, or nearly all, is in use; and the poorer farmers must rent land if they cannot afford to buy it. In the self-subsisting areas land has much less value: the poor farmer who owns no land is often able to obtain it simply by clearing and squatting on unused public land. Land rentals, therefore, are of little importance in the North-east, the South, and the North.

Let us turn briefly to the regional data in the Tables at the end of this chapter.

In the North-east we find that land rentals are most important in the Nongkai community which, as we already know, has good communication with the Changvad market, with Udorn, and with Viengchan. Receipts are greater than payments, and we must assume that the relatively well-to-do inhabitants of this village own more land than they can farm.

In the other North-eastern villages the figures are so small that they cannot well be analyzed. It is clear that land rentals have no importance to the average North-eastern farmer.

In the South we find that the Pattani village is in the position of landlord to the farmers of neighboring and outlying districts. Its receipts from land rentals are nearly double its payments. The community is an important trading center and it has invested in land.

Much the same thing appears to have happened, to a smaller degree, in the Naradhivas community. The villages near Trang and Jumbor seem, on balance, to be tenants. In the other villages the figures are too low to be susceptible of analysis.

One reason for the low land values of the rural parts of South Siam is probably that so great an amount of fruits and vegetables can be collected gratis from uncultivated public land.

In the North we find a number of "landlord communities" and among them San Mahapon,—for the same reasons which operated in the village near Pattani,—is most important. There are small and unimportant fluctuations from village to village.

One point which we may note with interest is that the data do not indicate any tendency for rural people to become tenants of landlords in the urban districts of Chiangmai, Lampun, and Lampang. Land rental receipts, in most of these villages, are equal to or greater than land rental payments and we conclude that the landlords and tenants are neighboring farmers of the same communities.

In the Center the land rentals are much higher than in the self-subsisting areas, and we find among our eleven villages only three which appear on balance to be "landlord communities",—those near Nontaburi, Lopburi, and Pitsanulok.

The Nontaburi village is rich from pottery making and fruit farming: it has in the past invested in more land than it can use. The Lopburi village appears to have done the same in past years: its communication is bad but it seems to have earned enough in time past to invest rather heavily in land. The figures for the Pitsanulok community are small, but the same thing seems to have happened there.

In the other Central villages land rental payments are considerably greater than land rental receipts, and we know that the reason for this is that much of the most valuable farm land in the

irrigated districts is owned by Bangkok landlords. Since the landlords are not themselves farmers, the relationship between farmers and landlords is not in most cases a good one. Land rental demands are based on the amounts which the farmers might fairly pay in a year of good prices for crops, and do not take into account the lessened productive value of the land in years when prices are bad. The situation is one of real importance and it may, if not corrected, work considerable harm to the farmers in future years. It is discussed in some detail in the chapter on Agricultural Credit,

In the South-east the land rentals are not very important. We may note that the rich pepper-planters of Ta Mai appear to have invested in land and to be, on balance, landlords to the neighboring districts.

BUILDING RENTALS.

The divisional data are as follows :

DIVISION	Bldg. Rent Paid	Bldg. Rent Received
North-east .. .. .	..	0.59
South	0.34	5.83
North	0.06	0.44
Center	0.30	2.44

The only point of importance to be derived from these figures is that the farmers do not in general pay building rent. They construct their own farm buildings, and their value is a part of the land value. Since they do appear to receive some rentals which are based on buildings, we may safely assume that their property holdings in the market centers do permit them to exact some building rentals from traders and the like.

In the North-east we find all the building rentals in the Nongkai village. It is clear that some of the relatively well-to-do inhabitants of this village own built up land in or near the market center, and that they rent this property to traders. Elsewhere in the North-east we find no rentals based on buildings: the land is agricultural and there are no villages among those we studied with

trading opportunities which are sufficiently important so that building rentals are possible.

In the South we find building rentals in the trading community near Pattani. These proceed from the holdings of two Malay traders who built shops in the market center and who rented them in 2476 to small traders of the village.

In the Jumbor village we find a single farmer who owned all the sheds in the local market and who contrived to exact a total rental of Baht 840.00 in 2476.

In the Surat community, again, we find a single farmer who owned the local market stalls and who rented them during 2476 for a total rental of Baht 120.00.

Buildings appear to be somewhat more important in the rural South than in the North-east and North. The reason for this, probably, is that trading is more brisk and that a number of commodities such as rubber and copra are handled in bulk and require small warehouses.

In the North we find no important figures from building rentals at all. San Mahapon, because it is a trading center, has some transactions on this account; but most of the traders put up and own the shops which they use.

In the Center there are only two of our eleven villages which had significant building rentals in 2476,—the Bangkok and Nontaburi communities. In the former there are quite a number of farmers and traders who derive small annual incomes from sheds and shops which they have put up at the strategic places where trading is carried on, and in the latter we find buildings of considerable importance for the making, storage, and sale of pottery.

In the South-east we find that some of the pepper-planters of Ta Mai own pepper warehouses and shops which have a considerable rental value.

LAND INVESTMENTS AND LIQUIDATION.

Land has been since time immemorial, and still is, the most valuable form of property in all countries. This is especially and most directly the case in farming countries. In rural Siam land,

work animals such as buffaloes and bullocks, and treasure,—silver and gold,—are the most important forms of investment. They are bought in times when profits are large enough to build up surpluses, and they are liquidated,—sold,—in times of depression. If we find that the farmers buy more of these properties than they sell, we may be sure that they are in a position of financial security: if they sell more than they buy it must be because their annual transactions are not profitable enough to pay expenses.

We have data in the report of the 2473 Survey which show what the average farmer invested in land in 2472, and we may compare this information with that which we have for 2476. The divisional figures are as follows:

DIVISION	Land Bought in 2472	Land Bought in 2476	Land Sold in 2476
North-east	2.60	0.97	0.48
South	3.65	2.43	..
North	8.21	2.11	0.28
Center	18.18	16.99	14.20

The self-subsisting areas, evidently, were able to invest more in this way in 2472 than in 2476. Central Siam, however, invested nearly as much in 2476 as in 2472.

It is encouraging to note that land investments were in 2476 greater in all areas than land sales. We may safely take this as an indication that the average Siamese farmer in 2476 was not obliged to liquidate his land, and we may safely assume that this was due largely to the fact that the 2475 rice crop was,—with the single exception of that of 2469,—the biggest in Siamese history.

We have no data on land sales in 2472, and it is perhaps unwise to make any guesses. It is generally true, however, that periods of depression bring about marked liquidation in farming countries and that the turnover, in the beginning of such a period, is annually much greater than that in the period of return to normal values. If this applies to the past few years in Siam, we may guess

that land sales by the farmers overbalanced investments in 2472, 2473, 2474,—perhaps in 2475,—and that the abundant crops of 2475 resulted in a change of the trend. If this be so, the fact that land investments were smaller in 2476 than in 2472 is of scant importance beside the fact that investments were bigger than sales in all areas.

In the North-east investment in land were very small, but they were equal to or greater than sales in all except the Udorn village.

In the South no land was sold in 2476, but investments were significant only in the Pattani community which, since it is chiefly engaged in rubber and copra trading, probably had a bigger surplus to fall back on at the beginning of the depression and more funds available for investment in 2476 than the farming villages.

In the North both land investments and liquidation were small in 2476. The higher investments of San Mahapon and the Laplae village are probably due less to profits in 2475 than to held over surpluses from a number of past years. The former community is fairly prosperous as a result of its trading, and the latter was formerly rich from fruit farming.

In the Center, as might be expected, the turnover was much greater because of the higher values of commercialized agricultural lands.

The Nontaburi community was probably the richest studied by the Survey and, like those of Nongkai, Pattani, San Mahapon, and Laplae, it seems to have had funds available for investment in 2476.

Although one hundred and fifty six families were studied in the village near Bangkok, not one had bought or sold land in 2476. The same was true of the Ayuthia and Bejraburi communities.

The Chaxerngsao, Dhanyaburi, and Saraburi villages,—especially the two latter,—liquidated significantly more land than they bought in 2476.

In the other Central villages the volume of transactions was not very big, but investments were more important than liquidations.

In the South-east we find that the Ta Mai village bought and sold no land in 2476, while Klong Naraya,—a much less commercialized village,—bought nearly three times as much as it sold.

BUILDING INVESTMENTS AND LIQUIDATION.

Buildings are very rarely bought or sold in rural Siam. As in the case of building rentals, the transactions are almost all on account of shops and warehouses. Dwellings, farm granaries, and other farm buildings are nearly always built by the farmer who plans to use them. In the self-subsisting areas he does nearly all of the work himself: in the commercialized areas more use is made of professional assistants and carpenters.

We find it impossible to separate the costs of house repair and maintenance from costs of new construction. Minor repairs generally cost nothing or extremely little. A few nails and a plank or two may be bought, but the tools can be borrowed from a neighbor and the farmer does the work himself. The commonest maintenance and repair charge is for new roofing and involves replacement of the grass or leaf thatch. The farmers,—or their wives and children,—almost always collect the material from nearby public land and prepare it for use with their own hands. If the nearby countryside is unusually deficient in such supplies, a Tical or two may be paid in cash for new thatch.

Dwellings are always being expanded. A new wing or a new porch is put up to take care of additions to the family, and the addition is just as much of an investment as a new house would be. Corrugated iron roofing is sometimes bought, and that must be treated as an investment.

Our only solution of the problem is to treat all expenditures for buildings as if they were investments. It is impossible to separate the costs of repairs from those of improvements, and we may be sure that the costs of repairs are very minute anyway.

The divisional data are as follows:

DIVISION	Buildings Bought, Constructed, and Repaired	Buildings Sold
North-east	7.01	0.03
South	3.85	..
North	7.49	0.41
Center	8.94	1.41

Building costs seem to be much the same in all areas of Siam except the South: building sales, unlike building rentals, seem to be more important in the Center than in the other areas.

In the North-east building costs are much higher in the Nongkai village than elsewhere. The people of this community are richer than those of the other North-eastern villages studied, and they employ professional carpenters to do most of their house construction. The buildings are not noticeably bigger or better than those of the more strictly rural regions.

The only sale of a building was in the Khonkaen community and, in this case, the purchaser bought an old building in order to pull it down and use the materials in a new house. We may note in advance that this is the chief reasons for buildings being bought and sold in all parts of Siam except the most urban districts.

In the South the figures on building costs are, in all regions, within the range established by the rural districts of the North-east. Houses are much the same as in the North-east, but they are built with less care and are rarely repaired until they are almost ready to fall apart.

In the North all but one of the villages studied lie within the same range already commented on. In one, however, there was a great development of building activity in 2476.

Nine of the forty families studied in Na Kuam spent amounts ranging from Baht 100.00 to Baht 300.00 for new houses in 2476. The village had a higher annual income than any other Northern village except San Mahapon, it invested more heavily in cattle and treasure than any other Northern community, and we must assume that it found itself in 2476 very well off. We may note that it is not very far from the Changvad markets and that it has communication with them by well-surfaced roads.

The houses in the North are much like those of the North-east but they make less use of bamboo and more use of solid timber. They are better kept than those of the South and Center. The greater part of the building costs is for planks and piles: considerable use is also made of baked tiles for roofing. The buildings which were sold were to be torn down and their materials to be used in new houses.

In the Center we find that the greatest amount of new construction took place in that community which appeared to be the richest,—that of Nontaburi. The pottery sheds require a great deal of thatch, and the artisans cannot risk leaky roofs which might damage their products. The kilns are made of brick and, as they are in operation all during the year, they require to be repaired nearly every year.

The lack of building materials in Central Siam,—due to deforestation and development of rice land,—makes building cost somewhat higher here than in the self-subsisting areas. Also, commercialization of agriculture has made the people less ready to perform handicrafts: they depend very largely on professional carpenters for house construction.

The houses of the Center are much the same as those of the other areas, but they must often be on higher piles as so many districts are from one to four feet deep in water during the rainy season. The houses are not, in general, as well cared for as in the North and North-east where the farmers are able to perform their own repairs as soon as they are needed.

SUMMARY AND CONCLUSIONS.

Land rentals, we find, are of little importance in the North-east, the North, and the South. In the Center they are important and, in the intensively irrigated districts, they are a source of much danger to the farmers. The chief need is for some means of equating land rental demands with the annual fluctuations in the productive value of the land. The demands are not excessive for years of good crops and high prices; but they are much too high, in many cases, for years of poor crops and low prices. A possible means of approach to this problem is suggested in the chapter on Agricultural Credit where, in considering the data on debts, we find that excessive land rental demands are an important cause of increasing indebtedness.

Investment in land was greater than liquidation of land in 2476 if we consider the four major divisions of the country as units. The regional data show that liquidation has continued in the less

well developed farming districts and that the investing communities are chiefly those which had considerable resources at the beginning of the depression. The data on debts and loans will show much the same thing.

It seems that the past five or six years have used up nearly all the savings and surpluses of the more isolated farming regions and of the poorer and less well established farmers in all regions. It has become necessary for such individuals to go to the market centers and richer agricultural communities in order to find buyers for their capital goods such as land, cattle, and treasure, just as they must go to these communities if they wish to borrow money. The data on debts show more clearly than the data on land and buildings that there is reason to believe a change in the trend has now started. Debts are being paid off in most regions, and we find that there have been investments in valuable property in a number of localities.⁽¹⁾

Buildings are rarely bought or sold in rural Siam, and they are rarely rented save in the market center where a good location for trading is of the highest importance. Our data show that building rentals are of no importance to the average farmer.

The building costs of the different districts show that there has been considerable new construction in 2476 in the better situated regions.

(1) Many factors affecting land tenure and usage were investigated by the former Survey and omitted by the Second. Most of these do not fluctuate very significantly from year to year but some of them,—such as land fragmentation,—are of very high importance. The reader who wishes to familiarize himself with land problems in rural Siam will do well to refer to pages 17—19 and the Tables on pages 25—36 in the published report of the First Rural Economic Survey.

TABLE VI. A.

Transactions in Land during 2476.

NORTH-EAST SIAM.

REGION	ANNUAL TRANSACTIONS		CAPITAL TRANSACTIONS	
	Land Rent Paid	Land Rent Received	Land Bought	Land Sold
Nongkai	0.94	1.36	2.50	1.25
Udon	0.25	0.02	0.10	0.60
Khonkaen .. .. .	..	..	3.43	2.00
Pu Vieng .. .. .	..	0.03	0.43	..
Sakonagor	0.18	..	0.30	..
Ubol	0.10	..	..	..
Khukan	0.11	..	..	..
Nag. Rajaasima.	0.29	0.44	1.00	..
Average North-east	0.23	0.23	0.97	0.48

TABLE VI. B.

Transactions in Land during 2476.

SOUTH SIAM.

REGION	ANNUAL TRANSACTIONS		CAPITAL TRANSACTIONS	
	Land Rent Paid	Land Rent Received	Land Bought	Land Sold
Naradhivas	0.24	1.84	0.38	..
Pattani	2.48	4.76	12.58	..
Songkla .. .. .	..	0.33	1.25	..
Trang	4.10	0.55	..	..
Nag. Sridhamaraj	0.17	0.30	..	..
Surat	0.37	..	2.83	..
Jumbor	1.44	0.73	..	..
Average South	1.26	1.22	2.43	..

TABLE VI. C.

Transactions in Land during 2476.

NORTH SIAM.

REGION	ANNUAL TRANSACTIONS		CAPITAL TRANSACTIONS	
	Land Rent Paid	Land Rent Received	Land Bought	Land Sold
Chang Puak (Chiengmai)	1.96	0.20	..	0.90
Mae Hiah (Chiengmai)	3.57	3.25	..	0.18
San Mahapon (Chiengmai)	5.33	7.40	5.00	..
Lampun	3.29	3.04	1.95	..
Na Kuam (Lampang) .. ..	..	2.31	2.50	..
Ban Sadej (Lampang)	0.19	0.49	..	..
Chiengrai	0.97	3.87	2.10	..
Chiengsen	0.44	3.29	3.38	2.00
Pa Daeng (Prae)	2.60	0.06	..	..
Mae Kami (Prae)	1.97	..	..	..
Laplae	2.34	3.86	6.25	..
Average North	2.06	2.53	2.11	0.28

TABLE VI. D.

Transactions in Land during 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	ANNUAL TRANSACTIONS		CAPITAL TRANSACTIONS	
	Land Rent Paid	Land Rent Received	Land Bought	Land Sold
Bangkok	16.56	5.85	..	..
Nontaburi	2.20	12.57	107.00	19.25
Chaxerngsao	17.92	7.03	..	6.00
Dhanyaburi	56.72	15.65	..	35.00
Ayuthia	40.29	20.12	..	..
Lopburi	9.89	15.15	18.50	11.50
Saraburi	9.46	5.54	13.25	68.50
Uthai Dhani	8.97	1.17	2.88	..
Supanburi	17.63	11.53	37.25	16.00
Pitsanulok	0.25	3.90	8.00	..
Bejraburi	35.30	0.40	..	..
Average Center	19.56	8.99	16.99	14.20
	CHANTABUN			
Klong Naraya	6.71	3.58	28.23	10.00
Ta Mai	0.53	8.90	..	..

TABLE VII. A.

Transactions in Buildings in 2476.

NORTH-EAST SIAM.

REGION	ANNUAL TRANSACTIONS		CAPITAL TRANSACTIONS	
	Building Rent Paid	Building Rent Received	Buildings Bought Constructed, and Repaired	Buildings Sold
Nongkai	4.73	39.38	..
Udorn	1.18	..
Khonkaen	4.59	0.23
Pu Vieng	7.63	..
Sakonagor	1.31	..
Ubol	1.75	..
Khukan	0.25	..
Nag. Rajasima
Average North-east	0.59	7.01	0.03

TABLE VII. B.

Transactions in Buildings in 2476.

SOUTH SIAM.

REGION	ANNUAL TRANSACTIONS		CAPITAL TRANSACTIONS	
	Building Rent Paid	Building Rent Received	Buildings Bought, Constructed, and Repaired	Buildings Sold
Naradhiwas .. .. .	..	..	0.97	..
Pattani	2.40	16.80	7.87	..
Songkla .. .. .	..	..	0.53	..
Trang .. .. .	..	..	4.66	..
Nag. Sridhamaraj .. .. .	..	..	0.55	..
Surat .. .. .	..	3.00	5.48	..
Jumbor .. .. .	..	21.00	6.91	..
Average South	0.34	5.83	3.85	..

TABLE VII. C.

Transactions in Buildings in 2476.

NORTH SIAM.

REGION	ANNUAL TRANSACTIONS		CAPITAL TRANSACTIONS	
	Building Rent Paid	Building Rent Received	Buildings Bought, Constructed, and Repaired	Buildings Sold
Chang Puak (Chiengmai) .. ..	..	..	2.63	0.20
Mae Hiah (Chiengmai) .. ..	..	..	3.59	0.36
San Mahapon (Chiengmai)	0.60	2.52	3.24	0.33
Lampun	0.12	..	0.71	..
Na Kuam (Lampang) .. ..	..	..	45.61	2.43
Ban Sadej (Lampang) .. ..	..	0.50	0.28	..
Chiengrai .. ..	..	..	1.26	..
Chienguen .. ..	..	..	8.67	1.20
Pa Daeng (Prae) .. ..	..	..	2.01	..
Mae Kami (Prae) .. ..	..	..	9.74	..
Lapise .. ..	..	1.86	9.70	..
Average North	0.06	0.44	7.49	0.41

TABLE VII. D.

Transactions in Buildings in 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	ANNUAL TRANSACTIONS		CAPITAL TRANSACTIONS	
	Building Rent Paid	Building Rent Received	Buildings Bought, Constructed, and Repaired	Buildings Sold
Bangkok	0.92	7.87	8.03	..
Nontaburi	2.10	19.02	39.60	2.25
Chaxerngsao .. .. .	..	..	2.75	..
Dhanyaburi	0.33	..	6.28	0.20
Ayuthia .. .. .	..	..	4.90	9.25
Lopburi .. .. .	..	..	7.39	..
Saraburi .. .. .	..	..	8.50	..
Supanburi .. .. .	..	..	3.68	0.10
Uthai Dhani .. .. .	..	..	3.51	..
Bitsanulok .. .. .	..	..	8.86	3.76
Bejraburi .. .. .	..	..	4.90	..
Average Center	0.30	2.44	8.94	1.41
	CHANTABUN			
Klong Naraya .. .. .	..	..	6.46	..
Ta Mai .. .. .	..	17.82	37.91	..

CHAPTER VI.

HANDICRAFTS.

INTRODUCTION.

Handicrafts are the first stages of manufacturing industries. We may say, indeed, that manufacturing industries are simply handicrafts which have been brought to a very high stage of commercialization and development.

At a time not far distant in Siam's past, every household practised various handicrafts in order to supply itself with the hand made articles which it required. Skilled craftsmen, whose livelihoods depended wholly on their artisanship, existed only to supply the temples and rulers with those finer articles which they alone could afford to have made.

With the coming of markets and a generally accepted means of exchange,—money,—those craftsmen who excelled in their work found themselves able to sell some of their products to farmers who, in turn, had earned money by the sale of some of their crops. Specialization was thereby developed. The craftsman whose wares were widely known as better than those made by others found it possible to earn more by spending all his time in the practice of his craft than by spending the greater part of his time in the fields.

To-day, commercialization of the crafts has proceeded to a very limited degree. In most parts of Siam each household still makes a large part of the articles which it requires. In the Central plains, where agricultural development has proceeded so far that most of the farmers spend nearly all of their time in growing rice, many objects are now bought which were formerly home-made. If we are to force that development of manufacturing industries in Siam, we must study the stage in which handicrafts have now progressed.

Very nearly all the households in the communities studied by the Survey grow their own rice, and are thereby free from the necessity of buying the most important part of their food. Many of these households are sufficiently apt in the performance of some handicraft to augment their incomes by the articles made and sold by some member or members of the family.

In very many cases it is the women who perform the crafts. Certain handicrafts, in all parts of the world, seem to be considered as essentially woman's work: this is almost always the case with weaving and cookery, and it is often the case with pottery making and various other crafts. In rural Siam, even though women do much of the agricultural work, there is usually a woman left in the house while most of the family is in the fields. She prepares food, cares for the children, and arranges domestic matters: she is usually a wife, but she may be a grown daughter or an older relative or dependent of the household. In and near the house the women perform the handicrafts.

The men, when they are free from the necessity of working in the fields, are less likely to remain in the house and more likely to spend their spare time in visits to friends, in recreation, in work for the temple, or in other occupations which are not productive from the standpoint of the household. They perform certain crafts such as, in Siam, the making of basketry; but they do not commonly produce more than enough for the needs of the family save in the case of those few individuals who have a special leaning toward some craft and who practise it as energetically as they do their agricultural work.

All of the villages studied by the Survey consist of households of this type. Our examination of the data for "average households" will give us a fair indication of the development of various crafts within each community, but we must remember that it does not give us a true picture of any individual household. If we find that a community has an average income per household of Baht 5.00 from iron-working, it does not mean that every household goes in for blacksmithing to this degree. It is far more likely to mean that one of the forty households studied earned Baht 200.00 from this

source, or that two of the households studied earned Baht 100.00 apiece. In the sense of handicrafts, therefore, there is no such thing as a family which has the income from various handicrafts which are found to be average for the forty families studied. The farming and fishing data gave much truer pictures of households, because nearly all households do grow crops and do catch fish. Our averages for various handicrafts do tell us, however, what crafts are developed in the various villages and what is their relative importance.

Before studying the various crafts in detail, we will do well to see what importance craftsmanship has as a source of income in rural Siam as compare with agriculture. We can do this by finding what the "average households" of the different areas earn by handicrafts, what percentage that is of all earnings, and how it compares with Income from Crops.

DIVISION	Income from All Crafts	Percentage of all Annual Income	Income from Crops	Percentage of all Annual Income
North-east	9.80	32.51 %	7.74	25.67 %
South	19.91	26.95 %	17.76	24.03 %
North	20.15	30.89 %	18.99	29.11 %
Center	34.09	18.47 %	105.47	57.15 %

In the three self-subsisting areas handicrafts account for more of the earnings than does agriculture. This is because there is not so regular a sale for agricultural produce as there is for artificial articles. All households grow their own food, and can if needful subsist without bartering or selling their crops in order to obtain other agricultural foods. Not all households do, however, perform crafts; and there is therefore a more regular demand for the products of crafts.

In Central Siam income from crafts is only a fifth of the total earnings, and only a third of that from crops. The economy of the area is commercialized, and artificial goods are handled by traders who specialize in their distribution and who obtain them from urban centers. We find relatively few craftsmen in the Central communities.

In the North-east it is found that crafts are of very high importance in the Nongkai village,—worth between five and six times as much to the village as agriculture, fishing, or trade. In the other communities they account for about the same amount of income as agriculture. The community near Nongkai is situated close to the Changvad markets, and is clearly specializing in the production of various articles and services which find a ready sale in the urban center. Its most important crafts are weaving and carpentry,—house construction primarily,—and it earns even more from transporting goods and passengers on the Mekong and from what we will call here “Trade Crafts”. Included in this latter category are those sums earned by commissions on sales of land and valuable equipment: older men who are well known in the countryside round about are sometimes offered a commission on such sales if they will find a buyer.

In the South the various crafts are of importance in nearly all villages. The outstanding ones are collection and sale of jungle produce, preparation and sale of cooked foods, transport of goods, and carpentry.

In the North the situation is much the same. Nearly all villages have appreciable incomes from various crafts including primarily collection of jungle produce, transport, weaving, carpentry, tile-making in Mae Hiah, and broom-making in the Laplae village.

In the Center the income from crafts is small, compared with that from agriculture except in the Nontaburi village. There the making of pottery has become almost a true industry, though it remains pretty much a family affair. Nearly all households of this village are engaged in pottery-making and have their own kilns.

We will continue our examination of handicrafts by referring to the tables at the end of this chapter, and by considering the national distribution of each craft.

WEAVING.

Weaving, without much doubt, is the most important and oldest established of all Siamese handicrafts. In the regions where it is most developed it is, however, least commercialized; so our data

do not give a truly accurate expression of the distribution and importance of the craft. By comparing income from weaving with expenditure for textiles,—clothing,—we can make a fairly good approach to the situation. Divisional data give the following figures:

DIVISION	Income from Weaving	Expenditure for Clothing and Textiles
North-east	0.73	3.73
South	0.11	5.82
North	2.59	5.46
Center	0.18	12.65

All areas of Siam spend on an average more for textiles than they earn by making them, and the discrepancy is very great in the South and Center.

In the North-east the discrepancy is great, but in point of fact is not so serious as it appears. Nearly every house in the North-east, except near Nagor Rajasima, has its own loom under the house; and nearly every farmer wears habitually the clothes which his wife and daughters make for him.

In the North the discrepancy is greater than it appears to be, because weaving is little practised to-day except in a few communities, and the bulk of the population has become dependent for the most part on purchased clothing.

In the South and Center weaving has almost disappeared although there are still a few foci of the craft.

In the North-east the chief reason for purchase of textiles,—since excellent ones are made in nearly every house,—is the changing of fashions. The Siamese woman's home-woven breastband or "phakatnom" has practically disappeared, and in its place are foreign woven breastbands and an article very like the now archaic European camisole. Sarongs with bright flower designs are much in demand: they are sold in every market, are patterned after Malayan and Javanese styles, and are imported from foreign manufacturing countries. Their price is low, and their colors are bright. It is true that they wear out very much more quickly than the homespun articles,

but the men like them nonetheless and women sometimes take to them almost as enthusiastically.

Pasins,—short wrap-around skirts,—are the traditional dress of the Lao women. These, like sarongs, are now manufactured abroad, and the ingenious Japanese have introduced to North-east Siam a variety of cheap cotton printed pasins which imitate with considerable success the traditional tie-dyed designs of the East Lao women,—but in brighter colors. These have a very great success, and are much in vogue in all the market towns.

Foreign made bath-towels and cheap blankets tend to replace the scarfs and heavier winter robes,—“pakhom,” of the people.

A large part of the expenditure for clothing in the North-east is, in fact, not for actual textiles but for the raw materials which go into them,—dyes, cotton, and imitation silk. The native dyes of the country are sombre in color and are obtained by boiling various vegetable products: they are now replaced almost everywhere by foreign synthetic dyes which cost very little and give very bright colors. Imitations silk gives a more lustrous effect than the crudely prepared home silk: it is often bought for the finer types of weaving. Cotton is often bought because relatively little is available from the fields in most parts of the North-east. In many districts silk is less valuable than cotton.

Although so much weaving is done in the North-east, there is very little commercial demand for the textiles. As a rule the housewife of the North-east is able to sell the products of her loom only to visitors from Bangkok or to the wives of higher officials and merchants. A fine white silk cloth is produced in some regions, and this is very satisfactory for uniform coats and European clothing: some of this is exported to Bangkok. Tie-dyed pasins from Chonabot, another type of pasin from Ubol, and the sarongs and phanungs of Nagor Rajasima are the only other textiles which are sent to Bangkok in any quantity. In Chonabot, Ubol, and Nagor Rajasima the textile craft has become to assume the dimensions of an industry.

The most profitable of the three North-eastern textile developments is that which has taken place at Nagor Rajasima, and there it is largely in the hands of Chinese who use what is known

as a "percussion shuttle". This is an ingenious but simple device which makes weaving almost automatic and which makes possible a much larger production. The percussion shuttle is simple and very inexpensive to make: any carpenter can do it. It is very necessary that this device should come into use among the Siamese weavers if the textile industry of rural Siam is to develop.

The establishing of modern textile mills with expensive machinery would be decidedly unsound in Siam today, because the market for Siamese textiles and the supply of native raw materials are both small. The next stage in the development of textile industry should be the introduction of the percussion shuttle. This should not be difficult. The device can be put on the Lao looms now in use and will require only a few adaptations. It will double or triple the productive capacity of each loom. It may be doubted if there is a single Chinese weaver in Siam who does not use the percussion shuttle; and the author has seen not one Siamese weaver who did use it.

The investigation of regions suitable for the growing of good cotton, and the encouragement of better technical methods in the production of silk, should go hand in hand with the introduction of the percussion shuttle.

In the South there is today almost a total absence of home weaving. In former times Nagor Sridammaraj was known for a certain fine type of phanung, and the district still produces a few of them. Elsewhere in the South nearly all textiles are bought.

Southern Siam derives a considerable income from the soil without much expenditure in money or energy. Most of the people, unfortunately, are inclined to be indolent. In years past they have been able to afford commercial textiles of various sorts, and they have now become dependent on them. The fact that a large part of the population is Malay results in a very wide sale of imported sarongs in Malayan and Javanese designs.

The Malays of South Siam buy all or nearly all their clothing from tradesmen who handle imported sarongs, the Thai of the Malay regions very largely follow the Malay custom, and in the Northern part of the peninsula where Thai phanungs are worn the textiles are chiefly of Bangkok origin.

We may conclude that there is no reason to suppose that the South will ever be a center for textile production.

In the North phanungs are not produced for sale. The men's clothing in the districts without good communication is still produced in the household, but there is by no means the general development of household weaving which is found in the North-east. In the communities near good markets the phanungs are chiefly of Bangkok origin: they are made of cotton and are monochrome.

The women of the North, like those of the North-east, wear pasins. In former times every village and often every district produced a type of pasin which differed in design and color from those of other districts. It was possible to recognize the origin of each Lao woman by a glance at her pasin.

To-day this old custom has largely died out, but the pasin designs of Laplae, Prae, Nan, and Chiengmai-Lampun remain fairly distinctive. Development of a textile industry in the Chiengmai-Lampun region has been chiefly responsible for the extinction of the old custom. Pasins are produced by thousands in these two centers every year; they are staple articles of commerce throughout the the North and they are exported to Bangkok and other parts of Siam in considerable quantity. In Prae there is a smaller development, and the typical Prae pasin is now sometimes found far from its place of origin. In Nan and Laplae the typical pasins are produced almost wholly for home use.

The Chiengmai-Lampun development has taken the form of ateliers or workshops in which from two to fifteen looms are operated with hired labor by a single operator. All the weavers are women. Near the workshops are the homes of other people who produce pasins in the same way and sell them to the workshop proprietors who are better able to dispose of them commercially.

The commercial pasin of this region is cotton, there are usually two colors, and the pattern consists of a background against which a number of horizontal stripes are woven. This pasin can be made just as well,—in identical color, texture, and design,—with a percussion shuttle loom as with the old Lao loom which is now in use. Introduction of this device would make it possible for each

loom to produce two or more pasins in the time, now required for one. Chinese in the same districts use percussion shuttle looms to produce poor quality phakomas and phanungs: one can hardly understand why so efficient and inexpensive an improvement should be neglected by the Lao.

Nearly all the raw materials used by the weavers of North Siam are of foreign origin. The commercial weavers of Chiengmai and Lampun use relatively little silk and this is almost entirely imported. The cotton is almost wholly imported, and it is doubtful if these people make any use at all of native dyes.

The household weaving of the North uses local cotton where it is available and, in the Nan valley, a certain amount of local silk; but the quantities of local materials which is available is very small and irregular. It is said that a series of accidental misfortunes a few years ago resulted in the death of nearly every silk worm in the Nan valley.

If cotton cultivation becomes wider spread in the North-east, or in the higher altitudes of North Siam, Pejabun, Leui, and Western Udorn and Khonkaen, the pasin industry of Chiengmai and Lampun should provide a considerable market for the crop. The same is true of silk, if its production and quality can be improved.

In the Center weaving has nearly ceased to be a household craft. Nearly all clothing is bought. Poor quality cotton phanungs are produced in Bangkok by Chinese who make use of the percussion shuttle, better quality cotton phanungs come from the South-east, and silk phanungs come chiefly from China.

Pasins have only within recent years come into favor in Bangkok,—all Thai women formerly wore the phanung, and most country Thai still do,—and they come chiefly from Chiengmai, Lampun, Chanabot, and Ubol. The North-eastern types from the two last named districts are likely to be more expensive than those from the North because they are not produced in such quantity, and they do not seem to be so much in favor as the simpler patterned ones from the North.

Phakatnoms, phakomas, pakhoms, and sarongs are almost wholly imported from foreign countries.

Production on a fairly large scale of silk phanungs in Bangkok should be a profitable enterprise if the garments are of good quality and fairly low price. Governmental officials,—retired and active,—make up a very large percentage of the population of Bangkok; and all wear silk phanungs. There is no reason why workshops with percussion shuttle looms should not use silk from the North-east with foreign dyes to produce good phanungs in quantity. To begin with, they would have to use imported silk: silk production in the North-east will not become widespread and well developed until there is a regular demand. When the supply of native silk expands, the Bangkok industries should use it.

In the South-east there are textile developments in Jolburi and Chantabun. Phanungs are the chief product, and these are better in quality than the ones produced by Chinese in Bangkok. Cotton is grown to some extent in the area, and it is likely that the textile industries can be expanded here as elsewhere by the introduction of percussion shuttles.

BASKETRY.

The making of basketry is a very widespread handicraft in Siam but it produces almost no income. It is a craft which is practised chiefly by the men, which has produced a great variety of complicated and ingenious weaves, but which has never developed any marked decorative qualities save in the Malay regions of South Siam and in the Annamite regions of South-east Siam.

Nearly every household of the North-east, South, North, and South-east still produces its own baskets and mats; and so do many in the Center. Considerable numbers of Chinese baskets are used, however, and these are chiefly made in Bangkok and a few of the bigger cities.

Palm leaf hats are used in the North, South, and Center; and these are produced chiefly by specialists in a few communities of each area: it is said that many of those used in Central Siam are made in Dhonburi and Ta Rua. It is doubtful if the making of basketry palm leaf hats has commercial possibilities for Siam but

there is a considerable demand for them and the country people show a strong reluctance to make use of Chinese basketry hats.

The making of finer quality hats from vegetable fibres and peacock quills is practised chiefly in the jails of rural Siam. It is possible that this craft might develop to the status of an industry if encouraged in Bangkok or in the provinces of the South where suitable vegetable fibres are present in greatest abundance. The demand among Siamese for such hats is small to-day but the same trend toward more European forms of clothing which is observable in other Asiatic countries is apparent in Siam and it may be that the demand will increase.

Wicker furniture of good quality is made in the jails of South Siam and there is little doubt that the market for it can be considerably increased. There is every reason to encourage the making of wicker furniture and good quality hats in Bangkok and in the Southern provinces. It can most profitably be done in the jails, and the greatest need is for standardization and increase of the output, and for better marketing methods. The Siamese of Bangkok who wishes good quality Pattani furniture today must write to Pattani, give a description of the furniture which he desires, and then wait two or three months for it to be made. There is no reason why the jails should not increase their output and place the product on sale in Bangkok in regular depots. An attempt has been made to do this, and it has failed because the prices asked were too high and because the venture was given no satisfactory publicity. The chief trouble is that the jails do not approach the problem in a business-like way. The prices which they put on the produce are out of all proportion to the costs of production, and it is not recognized that the industry can be built up only by keeping prices as low as possible until a satisfactory sale has been built up. The use of convict labor offers an excellent opportunity for the nation to develop the industry at a very low cost and to disseminate craftsmanship among the rural people.

The mat-making industry of Chantabun has already developed to considerable degree, and seems likely to keep pace with an increasing demand.

POTTERY.

The making of pottery is, in Siam, a rather specialized handicraft of very slight distribution but considerable importance in those few communities where it is practised. Pottery has never been very important in the life of the country people: coconut shells, bamboo, and gourds supply natural containers for liquids; and basketry containers for other commodities are lighter to carry and very well developed. Even cooking can be and still is quite widely done in bamboo containers, although crudely made cooking pots are now in general use everywhere. The Chinese makes much use of the ubiquitous petrol tin for this purpose.

Pottery had been made and sold during 2476 in only three of the forty villages studied by the Survey: in two of these the income earned in this way was wholly insignificant, and in the third,—the village near Nontaburi,—it amounted to an average of Baht 185.26 per household. Production of cooking pots for Central Siam is almost entirely done at a few communities such as those along the banks of the Menam Chao Phya not far from Bangkok.

A rather poor glazed pottery of Chiengmai, red and black burnished carafes made in villages near Chiengmai, and the rather well-made big water jars of Bangkok are the only exceptions to the rule that Siamese pottery today is uniformly crude, poor quality, and utilitarian in purpose. The fine wares of Sawankalok and Sukhothai which were introduced by Chinese potters from the court of Kublai Khan have wholly died out and left no descendants.

In the North-east the cooking pots are produced in a very few districts,—probably two or three in each province. In the North most of them come from Chiengmai, Lampun, and Lampang. In the South there are a few villages which make pottery, and in the Center there is a string of villages up and down the Menam Chao Phya,—both North and South of Bangkok,—which produce little but pottery. Most of these villages appear to have been settled originally by Mohn, and most of the potters in them today are Mohn.

Commercialization of pottery has proceeded to a high degree in these villages,—nearly every household in them is primarily interested in some phase of pottery production or distribution. In

some cases a number of household work together in one workshop as hired laborers under the supervision of a single proprietor, but most of the ateliers consist of related families each member of which profits on a share basis from the sales.

Clay is brought to the villages in boats from districts where its quality is best, and some of the men specialize in handling the raw clay, moistening it, and kneading it with sand. Other individuals,—usually women,—specialize in the actual shaping of pottery on potters' wheels: children, or apprentices, keep the wheels spinning. Other men are occupied in the preliminary sun-drying of the pots and their baking in the kilns. Slight burnishing of the baked pots is done by women or boys. Merchandising is done by older women or the proprietors of the bigger workshops.

The big sales of pottery in bulk are usually to Chinese traders who come to the villages in large boats. These men are prepared to transport the pots a considerable distance on the rivers before disposing of them at retail prices. Siamese women come in small canoes to take small lots of pots for retail sale in the klongs of Bangkok and nearby urban districts. Inland pottery sales are chiefly handled by Chinese itinerant peddlers.

It is clear that the making of pottery is chiefly in the hands of Mohn people, and that its merchandising throughout the country is chiefly done by Chinese. Pottery-making,—unlike weaving,—is not a craft which has been long developed among the Thai and Lao. It is also clear that the pottery is not, of a quality which will ever command a really big sale except among the farmers who want cheap cooking pots, and that the production is now quite equal to the demand. Since the demand is not likely to increase we must conclude that there is no reason to suppose the pottery industry would repay any efforts to put it on a more commercial basis than it has already achieved.

TILE AND BRICK-MAKING.

Allied to pottery making,—in that it makes use of much the same raw materials,—is the production of bricks and tiles. In our

tables the income derived from this occupation is included under the "All Other Crafts" category.

We find significant developments of this craft only in Mae Hiah and in the villages near Lampun and Nongkai.

Production of both bricks and tiles depend almost wholly on the amount of building construction being carried on at a given time. The raw materials are almost everywhere available, and it is possible to inaugurate a brick-making occupation at very brief notice wherever bricks are desired. When a temple is to be built, the bricks and tiles usually are made from local clay and mud and are baked in a large kiln which is constructed for the purpose: most of the farmers who engage in the work do so to make merit and not to earn money. Under some circumstances the bricks and tiles are made for the temple by a man who has had previous experience in their production, and who is paid for his services. This was the situation found in Nongkai.

Mae Hiah, on the other hand, is very near to Chiengmai where there is a fairly constant if small demand for building materials. Tile-making has therefore developed and appears to be on a fairly profitable basis. It is to be noted, however, that extensive repairs to the Mae Hiah temple were being carried out in 2476 and 2477 and that these had necessitated the construction of a large kiln for baking bricks and tiles. The tile industry of the village, which included sales to Chiengmai and other districts, may have been purely a sporadic and fortuitous outburst which will not survive completion of the local temple work.

A situation which was almost identical was found in the Lampun village.

We must conclude that the making of tiles and bricks is so easily undertaken by farmers with little experience and is so facilitated by widespread availability of raw materials, that it is not likely to develop on a commercial basis except in the vicinity of Bangkok and the largest urban centers. Most of the tiles used in Bangkok today are made by Chinese in or near the city. Some of the bricks are made in the same way, but a considerable number are made upstream in one of the Mohn pottery villages.

CARPENTRY.

Carpentry is seen, from a glance at the data, to be an important and widespread handicraft. It includes arbitrarily in our analysis house-construction, cart-making, wood-carving, and the making of various wooden articles for general purposes. Boat-building is not included, as we desired to include that with handicrafts allied to fishing.

Although it is so widespread, carpentry is seen to distinguish only one community of the forty studied by the Survey beyond its neighbors. This is Na Kuam where, as we have seen in a previous chapter, there was an unusual development of building activity in 2476. The "average household" spent Baht 45.61 for building construction, and earned Baht 22.08 from carpentry. It seems evident that house-construction, like brick-making, is an occupation which springs up wherever and whenever the need for it arises. Most households do their own carpentry work but when funds are available and extensive construction is desired there is a tendency to employ specialists in this craft.

Near Lampang and Præ the wheelwright's craft has attained considerable dimensions. Cart wheels are made there and sent by rail to other regions of North and Central Siam.

The regional data do not call for any special comment. In most villages there are one or two men who do more carpentry work than others, and who are regarded as especially expert in the making of carts, and the like.

METAL CRAFTS.

Metal working,—unlike carpentry and brick-making,—is a specialized occupation in rural Siam as in most parts of the world.

In the past, and to a certain degree in the present, it may almost be said that silver and bronze have been more important to rural Siamese than iron. As in most countries, bronze was known before iron and was used originally for a variety of purposes to which, later, iron was found to be better adapted. It is probably safe to say that the Lao and Thai peoples came to Siam with jungle knives and weapons as their only iron objects. Even today, it is

chiefly for cutting implements that iron is used, and in all parts of the Kingdom silver ornaments and silver household objects are almost as common as iron articles. In the North-east and South-east even the cart axles are made of wood.

Iron, for its specialized purposes, has however long been used; and the iron-workers seem always to have been craftsmen who spent the greater part of their time in this one occupation. The average farmer, today as in the past, obtains his iron implements by purchase or barter.

In former times there were probably one or two families in each amphur or tambol who performed the blacksmith work for the region. Sometimes, apparently, groups of blacksmiths wandered from village to village making and selling their knives and axes. Today the same situation is found to a small degree in the remoter parts of the North-east and the North and, even less, in the most remote parts of the Center. The Survey Party encountered a group of itinerant Thai blacksmiths in Uthai Dhani. The greater part of the iron-working is done today, however, by Chinese blacksmiths in the market centers. In Chantabun a considerable part of the work is done by Annamites.

There were probably a number of original sources of iron in Siam: one of these we know to have been the Muang Hawt plateau, about a hundred kilometers South and West of Chiangmai. The original sources are little used today, and most of the iron used is of foreign origin. The blacksmiths buy scrap iron in the markets, and reclaim it: the best knives made in Siam today are of iron which came to Siam in the form of automobile springs.

The working and casting of bronze is chiefly the work of the temples: it is done either by priests or by villagers who desire a new image of the Buddha for their shrine.

The working of silver is still done to some extent by Siamese, especially in the regions such as Chiangmai which have long been famous for their silver work. In most areas it is now done by Chinese in the market centers. Workmanship in gold is subject to the same statements, but it is less extensive than silver-working.

In the villages studied by the Survey there was only one,—

that near Lampun,—where metallurgy accounted for a significant part of the income. This community,—like the “Silver Village” near Chiangmai,—carried on an old tradition of Siamese gold and silver smithing.

Our conclusions with regard to metal crafts, and the possibilities of developing metal industries, must be that the market for simple metal goods is not large in Siam, that it is not very likely to expand, and that the raw materials for metal industries seem not to be present in any quantity. It is therefore unlikely that the metal crafts will develop into a highly profitable industry.

Such needs for metal goods as will develop will be for automotive and other machinery, and Siam can much better afford to buy such equipment from industrial countries which produce it efficiently than to attempt to develop a highly technical machine industry.

FARM CRAFTS.

By “Farm Crafts” we mean the making of various articles and implements used in agriculture such as rice-milling machines, ploughs, and the like. Most households produce their own apparatus of this nature in all parts of Siam except the Center, and the remarks which have been made about carpentry apply equally well here.

FISH CRAFTS.

By “Fish Crafts” we mean the making of various equipment used in fishing, and the performance of fishing in the boats of other people on a share basis. It did not seem reasonable to consider this occupation as “labor”, because it demands skill and is not paid by wages. We have discussed the income from this source in the chapter on Fishing, and have found that it is everywhere small except in the Jumbor community.

Unfortunately the Survey did not visit any true fishing village on the coast, and we cannot say what the true importance of net-making and boat-building may be. It is probable that they are much more important than the crafts which are allied in the same way to farming, and that they are developed on a more commercial

scale. If marine fishing continues to develop, it is quite possible that true industries of rope and net making will become profitable. The raw materials for such industries are available all along the coast.

FOOD CRAFTS.

The preparation and sale of ordinary foods such as rice, and vegetable and meat dishes, is almost wholly in the hands of Chinese in the market centers. The cooking and sale of fruits, cakes, and various sweet dishes is, on the other hand, almost wholly done by Siamese women.

Every household in rural Siam prepares its own daily food. It is only where communication and market centers have developed that there is any wandering population which, not having a home nearby, must purchase its food from cookshops. These are run by Chinese.

The cooking of cakes and sweets, on the other hand, is not done very extensively at home. The woman who knows how to cook one type of cake does not, as a rule, attempt to cook other kinds. The average Siamese household, therefore, obtains variety in its sweet dishes by buying them ready cooked from market women each of whom is ready to sell her own special type of cake or candy. Wherever there are markets this occupation is important.

In the North-east and the North,—where the heavy and somewhat indigestible glutinous rice is the chief food,—we find that that the markets have relatively fewer sweets than those of the South and Center. This may be because of the presence in glutinous rice of food values which diminish the need for sweets, or it may be because of a smaller surplus of income which may be spent for luxuries. In any case, the Lao markets have an abundance of highly flavored dishes to be eaten with glutinous rice,—*plara*, *nam prik*, and the like,—and relatively little in the way of sweets. In the South and Center great quantities and a great variety of sweets may be found in every market, along the road side, and on the rivers.

Throughout Siam every household which is within a short distance of a market sends one or more of its women to the market

every morning. There they sell the small household surpluses of fish, betel-nut, fruit, and vegetables; there they cook cakes and sweets in special pottery containers; and there they buy or obtain by barter those foods which the household has not produced for itself. In many cases, the major cash income of the family is earned by the women in this way.

Most crops,—with the exception of rice,—are sold in this way. Most fish in the inland areas is sold in this way. Now we find that average earnings from the making and sale of sweets amount to more than that from fish and small crops in many districts.

The development of this occupation depends, as does the sale of fresh fish and fruits and vegetables, almost wholly on the extension of communication and the opening of small markets throughout the country. It is not likely ever to attain industrial dimensions, because so much of the food of each household in a farming country is prepared at home. It is however a very valuable source of extra income to the farming families today and it will increase in value, —especially to the poorer farming families which cannot afford to commercialize crop production,—as time goes on.

SALT MAKING.

Most of the salt used in rural Siam today is obtained by the evaporation of sea water in Smud Sakorn and other regions on the coast. From these regions it is sent to all parts of inland Siam.

North-east Siam, however, produces a large part of its salt for home production from salt licks. At some time probably not far back in the geological history of the Kingdom, North-east Siam was an ocean bed. As the sea receded lakes, lagoons, and marshes were left in the depressed regions. In these, the slow process of evaporation concentrated the salt content of the water and finally left the soil strongly impregnated with salt. The Siamese farmers go to these districts, construct heavy wooden troughs from hollow tree trunks, fill these with broken soil, pour hot water over the soil, and then remove the water and evaporate it. The salt obtained in this way is rather poor in quality, but it is much cheaper than salt brought in from the coast. There is, consequently, a considerable

development of salt production in those communities which are close by good salt licks.

Our data show an income from salt-making in five of the nine North-eastern villages, and in only one other community which was studied. The Pattani villagers obtain salt by evaporating sea water just as it is done in Smud Sakorn: they export a certain amount to other Southern communities and to Malaya.

There is some reason to believe that the marsh salt of the North-east is not as healthy a food as sea salt, and it is likely that the people will cease to use it when they are able to afford sea salt. The production of sea salt seems to be adequate for the demand today, and there is little reason to suppose that the demand for it will increase unless there is an expansion of the fish exports from the coast. The production could be improved in quality, but it does not appear to be likely that such an improvement would be financially profitable today.

JUNGLE CRAFTS.

We will consider as derived from "Jungle Crafts" all income obtained by the collection, preparation, and sale of jungle produce. The most important products are the leaves and vegetable products which are used in roofing and building, bamboo, and the "yang" oil or tar which is collected from *Dipterocarpus* trees and used for waterproofing baskets, boats, and the like. Wood which is cut for building purposes is also included in this category. Nearly every community studied by the Survey earned some income in this way.

In North-east Siam the most important produce of the jungle is wood to be used as fuel, for building, and for making charcoal. Almost as important is yang oil. Nearly all regions have the same needs for these products, and nearly all have the same natural supply. Income does not vary greatly from region to region.

In South Siam we find large incomes under this category in the villages near Nagor Sridhamaraj and Surat. In the former the chief produce was yang oil and torches: in the latter we find in addition various other vegetable produce such as bamboo shoots and tubers.

In the North we find one village,—poor in every other respect,—which obtained a considerable income by collecting “pluang” leaves from the jungle. These leaves form a valuable roofing material in North Siam and, when they are not plentiful near the village, they are bought from such poorer communities as Chang Puak which have an adequate supply. The collection and preparation of yang oil, torches, and materials for housebuilding are subsidiary sources of income in most Northern villages.

In the Center we find that the chief form of “jungle produce” is wood for fuel, torches, and building. It is responsible for most of the income under this heading in all the Central communities.

TRANSPORTATION.

In former times the transport of Siam was carried on almost wholly by boat or human carriers. Bullock carts were used for rice and heavy commodities in the flat plains areas where cart tracks were easily established, and pack ponies were in use in the hilly regions where cart tracks were more difficult to develop. A small amount of transport was performed by elephants in the most difficult regions of all.

To-day the railways have opened up narrow lines of communication in all the important areas of the Kingdom. Every place where roads have been built or cart tracks have been improved the motor lorry is taking the place of the slower bullock cart. Heavy transport of rice on the rivers has been taken over by Chinese who are more ready to spend their days in extremely hard labor than are the Siamese.

Transportation offers various ways to the rural Siamese of earning money. They are sometimes employed to drive bullock carts or motor lorries, and sometimes obtain occupation as drivers of motor launches. Less often, they compete with the Chinese for such less attractive tasks as portage of commercial goods on carrying poles.

In the North-east we find that only one community,—that near Nongkai,—has a high average income from transportation. Some of the inhabitants of this village are occupied in running a ferry service across the Mekong, and others are employed to drive

motor lorries between Nongkai and Udorn. In other parts of the North-east there is practically no transport save by the traders themselves and, of course, the railroad. Cart tracks in the North-east,—except for the short stretch between Udorn and Nongkai,—are impassable in the wet season and almost impassable in the dry season.

In the South a considerable number of individuals find employment as drivers of motor lorries in the communities which are near good roads, one individual was found in the Surat village who had earned Baht 110.00 by transporting goods by elephant into the hills, and in the Jumbor community several individuals had earned fairly large sums by transporting supplies to the islands where bird's nests are collected.

In the North roads have constructed from the railway to Muang Fang, Chiengsen, and Nan. Along these roads we find some of the people earning significant sums by driving motor lorries which transport passengers, rice, and various supplies. In one of the villages near Lampang this occupation accounted for an average income of Baht 15.54 per household.

In the Center most of the transport is by river boats, and we find that very few Siamese wish to compete with Chinese in this back-breaking occupation.

The opening of good roads throughout rural Siam will provide a congenial and profitable source of income to Siamese. Young Siamese have no ambition to row heavy paddy boats up and down the river, and they can earn little by driving bullock carts; but they welcome any opportunity to become truck drivers or to operate motor boats. Those who are now able to find occupation of this nature earn far more than the farmers, and when good roads and markets are to be found throughout the countryside there will be many opportunities of this nature.

ENTERTAINING.

We have listed under this category all income derived from occasional performances as musicians or dancers. It is clear from the small sums discovered that only professional musicians and dancers can hope to earn appreciable sums in this way.

MEDICAL CRAFTS.

We have considered the practice of unscientific medicine as a craft, whether performed by incantations or drugs. Average income from this source is inconsiderable, but there are few market towns which do not have one or two individuals who are ready to cure all illnesses by time-honoured if unproven methods.

"ALL OTHER" CRAFTS.

A large part of the income from handicrafts is derived from occupations so varied that they could not profitably be classified in any of the foregoing categories. We are obliged to take them up by villages.

In the North-east these occupations included tile-making and cotton ginning in the Nongkai community, and making of torches, fence making, and preparation of lime to be chewed with betel-nut in the other villages.

In South Siam we find a few people in each village who earned small sums by picking other people's coconuts for them. Other occupations are the making of palm sugar, selection and classification of birds' nests, and mat making. A few individuals encountered by the Survey earned small amounts by watching over other people's cattle, by barbering, by castrating pigs, by massage, and by the performance of Moslem rituals.

North Siam. In Mae Hiah tile and brick making were important and have already been discussed. In the Lampun village considerable sums were earned by doing laundry and menial work of all kinds for urban families, in Na Kuam we find a prospering undertaker, and in the Laplae village a few men were employed as mahouts while many made brooms for the Utaradit market. A great variety of other occupations were followed sporadically by a few individuals of each village, but the amounts earned were insignificant.

In Central Siam these minor occupations are so many and so varied that scarcely any special village developments are noticeable. We find many charcoal burners in the remoter districts, here and there are barbers who earned large sums, broom and mat makers, masons who put up or repaired images in the temples, undertakers,

people who made sugar from palm and cane and, in the more closely settled regions, a few people who profitably if illegally made and sold hard liquor, some who were employed as skilled operators in rice mills, and a few who earned money by "being witnesses in law courts."

These "All Other" crafts appear, for the most part, to be occupations which are subsidiary to others, or else occupations which have very limited possibilities for further growth. The ones which should be born in mind are those which proceed from commercialization and general economic development. Just as he readily takes to motor lorry and motor boat driving, the young Siamese appears ready to learn those occupations which call for a certain amount of mechanical ability. When transport becomes mechanized, and when the rice business of the nation is handled by more machinery, young Siamese will embrace the opportunities offered to learn skilled occupations.

CONCLUSIONS WITH REGARD TO HANDICRAFTS AND FUTURE INDUSTRY.

Industrial development cannot proceed unless there exists a demand for industrial produce, available means of distribution, and a consuming public financially capable of buying the produce. Industrial development in Siam is primarily impeded by the general stagnation of trade which is chiefly brought about by the lack of highway communication and which results in low purchasing power in the rural population. Expansion of highway communication will lead,—as it has already done in some districts,—to trading developments and to increased purchasing power. Increased purchasing power, in conjunction with the communication which will make distribution of industrial produce possible, will open opportunities for industrial developments.

Analysis of the existing handicrafts of Siam indicates rather few which seem capable of industrial development to-day. Those which seem to offer the best opportunities are :

Textile Industries. Weaving is to-day the most important of Siamese handicrafts, and the high percentage of rural expenditures

which goes for textiles and clothing is a sure sign that a good market for textiles already exists. Raw materials for such industries are grown in Siam, but are present in small quantity. If cotton and silk can be produced on a larger scale and in better quality it will become possible for Siamese textile industries to depend on native sources for all raw materials except dyes. Such an expansion of cotton and silk production will not come until highway communication is extensive in the North-east: the North-eastern farmer who to-day may have a small surplus of cotton or silk is unable to sell it, and the purchasing agents of a textile industry would find it quite impossible to establish satisfactory commercial relationships with the producers of silk and cotton. Such commercial developments of weaving as have already taken place in Siam are therefore dependent for the most part on imported foreign cotton and silk.

Dyes must be bought from foreign countries. The native dyes from vegetable materials would be expensive to produce on any large scale, and it is already found that the consuming population prefers the brighter colors of synthetic dyes. Development of a synthetic dye industry in Siam is completely impossible to-day, and will doubtless remain impossible for many generations to come.

Textile crafts already begin to assume industrial dimensions in Chiengnai, Lampun, Chonabot, Nagor Rajasima, and Ubol. In each district they take the form of ateliers with many looms using local female labor. They produce pasins in quantity and in good quality: new textile developments should attempt to supply the demand for good silk phanungs which are now imported from China. The percussion shuttle which is used by Chinese weavers should be adopted by Siamese weavers: it will increase production and, if used with care, will not affect the quality of the goods produced.

A textile industry should not be started on a large scale until it has first proved profitable on a small scale. Foreign textile machinery,—which is both expensive and complicated,—should not be introduced at this time.

The industry must be started by private enterprise, and it must be controlled by an individual who hopes to make a personal profit from it and is willing to work hard to earn his profit. The

manager must have complete authority and complete responsibility. Experience has shown that industrial enterprises are rarely a financial success except when they are controlled by individuals whose personal welfare depends on the success of the industry.

Some publicity should be given the development, and it should be encouraged by the government. If phanungs are good in quality and sold at reasonable prices they will soon take the place of imported Chinese phanungs in the large official population of the national capitol.

Wicker furniture made from rattan and other vegetable fibres sells at high prices in foreign countries. A very good quality is already produced in the jails of South Siam, and it is appreciated by that part of the Siamese population which knows of its existence. An attempt should be made to produce much more furniture, to display and advertise it in Bangkok, and to keep its price as low as possible. By using convict labor it should be possible to sell an excellent grade of furniture very cheaply and to develop a considerable commercial market. When the furniture is well known and in considerable demand it can be made financially profitable.

Hat making is subject to much the same comment. The fine quality hats are produced to-day in the jails, and their production should be increased.

Rope and Net Making will offer industrial opportunities proportionate to the increase in the marine fisheries. The raw materials of coastal Siam could lead to as valuable a cordage industry as that of the Philippine Islands.

Food packing industries depend more than any other on the expansion of communication and the development of a large rural market. Certain foods,—notably salt and various forms of preserved fish,—are transported to-day in the face of great difficulties into regions of Siam where there is practically no communication at all. When highways into all the agricultural regions make it possible for farmers to sell garden produce and to buy non-local foods there will be a very great market within Siam for packed foods. Already, foreign packed foods are sold in every market town.

Foods which seem most likely to develop in this way are fish and fish produce in many forms, and fruit and fruit produce. Various fruit sugars, beverages, and jellies will probably be produced and packed in Siam within a few generations.

The industries should concentrate on the needs of the Siamese market, but it is not impossible that some packed foods could be sold abroad.

Transport must be mentioned here although it is not an industry in the productive sense. Operation of transport vehicles already brings considerable income to many rural Siamese, and the expansion of highways will make this source of earnings available to many more.

This chapter may be concluded by pointing out that:

- (1) Siamese industries must for many years depend on Siamese markets.
- (2) Attempts to produce on a large scale goods for which there is little Siamese demand will fail, and
- (3) It is useless for Siam to attempt to produce manufactured goods which can be bought more cheaply from foreign countries than they can be produced in Siam.

TABLE VIII. A.

Income derived from Handicrafts.

NORTH-EAST SIAM.

REGION	Textiles	Baskery	Pottery	Carpentry	Metal Crafts	Farm Crafts	Fish Crafts	Food Crafts
Nongkai	4.67	..	..	9.60	0.50	0.50	0.85	2.61
Udorn	0.19	..	..	1.74	..	0.25	..	..
Khonkaen	0.75	..	..	0.40	1.00	0.05	0.40	..
Pu Vieng .. .. .	..	0.03	..	0.60	..	1.33	..	..
Sakolnagor	0.08	0.33	..	0.05	1.61	..	0.01	..
Ubol	0.02	0.20	..	0.75	0.01	..	0.05	..
Khukan	0.05	0.07	0.14	0.89	0.12	..	0.05	..
Nag. Rajasima	0.05	..	..	2.45	..	0.90	0.05	..
Average North-east	0.73	0.08	0.02	2.27	0.39	0.38	0.18	0.33
Percentages North-east	7.45	0.81	0.20	23.16	3.98	3.88	1.84	3.37

TABLE VIII. A.—(contd.).

Income derived from Handicrafts.

NORTH-EAST SIAM.

REGION	Salt Making	Jungle Crafts	Transport	Trade Crafts	Entertaining	Medic. Crafts	All Other Crafts	Total Crafts
Nongkai	1.50	0.45	8.05	12.00	..	2.50	5.00	48.23
Udon	0.65	1.11	..	..	..	0.12	0.45	4.51
Khonkaen .. .. .	..	1.21	0.39	..	..	..	0.19	4.39
Pu Vieng .. .. .	..	1.99	0.24	..	..	0.20	0.07	4.46
Sakolnagor	0.68	0.22	..	..	..	..	0.01	2.99
Ubol	2.63	0.53	..	..	..	..	0.97	5.16
Khukan .. .. .	..	0.23	0.15	..	..	..	0.20	1.90
Nag. Rajasima	0.01	0.48	0.28	..	0.20	..	0.59	6.79
Average North-east	0.68	0.78	1.14	1.50	0.03	0.35	0.94	9.80
Percentages North-east	6.94	7.96	11.63	15.31	0.30	3.57	9.59	100%

TABLE VIII, B.

Income derived from Handicrafts.

SOUTH SIAM.

REGION	Textiles	Basketry	Pottery	Carpentry	Metal Crafts	Farm Crafts	Fish Crafts	Food Craft
Naradhivas	0.08	..	1.38	..	0.40	..	0.69	
Pattani	0.49	..	6.86	1.83	0.78	0.35	2.95	
Songkla	0.28	0.20	..	1.70	..	..	2.53	
Trang	0.50	0.05	..	1.43	..	0.83	8.87	
Nag. Sridhamaraj ..	..	..	..	0.15	..	..	6.33	
Surat .. ..	..	0.12	..	1.83	..	..	1.13	2.66
Jumbor .. ..	..	..	..	2.74	..	0.30	9.17	5.19
Average South	0.11	0.13	..	2.30	0.26	0.33	1.52	4.17
Percentages South	0.55	0.65	..	11.55	1.31	1.66	7.63	20.94

TABLE VIII B.—(contd.).

Income derived from Handicrafts.

SOUTH SIAM.

REGION	Salt making	Jungle Crafts	Transport	Trade Crafts	Entertaining	Medic. Crafts	All Other Crafts	Total Crafts
Naradhivas .. ..	..	1.94	0.06	0.78	20.08	1.75	1.14	8.30
Pattani	0.73	1.28	2.68	..	..	..	1.98	19.91
Songkla .. ..	..	0.90	..	0.10	..	..	0.68	6.38
Trang .. ..	..	1.38	1.15	..	..	..	0.46	14.65
Nag. Sridhamaraj .. ..	..	9.03	0.07	..	0.05	0.75	1.67	18.05
Surat .. ..	..	20.26	2.75	..	..	..	3.41	32.15
Jumbor .. ..	..	2.01	11.29	2.87	..	0.70	5.69	39.96
Average South	0.10	5.25	2.57	0.54	0.02	0.46	2.15	19.91
Percentages South	0.50	26.97	12.91	2.71	0.10	2.31	10.80	100%

TABLE VIII. C.

Income derived from Handicrafts.

NORTH SIAM.

REGION	Textiles	Basketry	Pottery	Carpentry	Metal Crafts	Farm Crafts	Fish Crafts	Food Crafts
Chang Puak (Chiengmai) .. ..	..	..	..	6.31	..	..	..	1.13
Mae Hiah (Chiengmai)	0.63	..	0.06	0.19	..	..	..	0.27
San Mahapon (Chiengmai)	1.13	0.15	..	0.25	..	..	0.24	0.84
Lampun	25.35	0.06	..	3.28	6.36	..	..	0.10
Na Kuam (Lampang)	0.75	..	..	22.08	..	..	..	..
Ban Sadej (Lampang)	0.02	0.51	..	2.24	..	..	..	..
Chiengmai .. ..	..	0.04	..	1.14	..	..	..	0.58
Chiengsen	0.25	0.23	..	0.98	..	0.12	..	..
Mae Kami (Prae)	0.26	0.11	..	2.07	..	..	..	..
Pa Daeng (Prae)	0.02	0.07	..	1.67	..	..	..	..
Laplae	0.10	..	..	1.97	..	0.15	..	..
Average North	2.59	0.11	0.01	3.84	0.58	0.03	0.02	0.26
Percentages North	12.85	0.55	0.05	19.06	2.88	0.14	0.10	1.29

TABLE VIII. C.—(contd.).

Income derived from Handicrafts.

NORTH SIAM.

REGION	Salt-Making	Jungle Crafts	Transport	Trade Crafts	Entertaining	Medic. Crafts	All Other Crafts	Total Crafts
Chang Puak (Chiengmai)	14.59	0.85	..	0.05	..	0.10	23.03
Mae Hiah (Chiengmai)	2.80	2.48	..	..	..	15.21	21.64
Ban Mahapon (Chiengmai)	5.52	2.87	..	..	0.60	1.75	13.35
Lampun	0.87	6.94	..	..	..	9.08	52.04
Na Kuam (Lampang)	1.88	15.54	2.65	..	0.50	3.72	47.12
Ban Sadej (Lampang)	4.55	1.42	0.03	..	0.08	1.77	10.62
Chiengrai	2.01	1.00	9.50	..	..	1.25	15.52
Chiengsen	0.53	3.82	..	..	..	0.83	6.76
Mae Kami (Præ)	0.72	0.74	..	..	0.50	0.19	4.59
Pa Daeng (Præ)	4.22	0.30	..	..	0.30	0.64	7.22
Laplao	1.07	0.84	..	..	0.08	15.60	19.81
Average North	8.52	8.84	1.11	..	0.19	4.56	20.15
Percentages North	17.47	16.68	5.51	..	0.94	22.63	100%

TABLE VIII. D.

Income derived from Handicrafts.
CENTRAL AND SOUTH-EAST SIAM.

REGION	Textiles	Baketry	Pottery	Carpentry	Metal Crafts	Farm Crafts	Fish Crafts	Food Crafts
Bangkok	0.16	..	2.31	..	0.05	..	2.34	
Nontaburi .. .. .	..	182.56	..	0.13	..	..	..
Chaxerngsao	0.08	..	0.31	..	..	..	2.27	
Dhanyaburi .. .. .	..	..	..	..	..	0.01	0.14	
Ayuthia	0.93	..	1.00	..	0.20	..	7.35	
Lopburi .. .. .	..	..	..	..	..	0.01	2.83	
Saraburi	0.38	0.19	..	0.95	..	..	5.13	
Supanburi	0.10	0.06	..	1.13	..	0.50	0.50	
Uthai Dhani	0.51	..	..	0.45	..	..	0.70	2.41
Pitsanulok .. .. .	..	0.13	..	..	..	..	0.42	0.19
Bejraburi	0.89	..	..	1.20	..	0.14	0.22	3.82
Average Central	0.18	0.13	16.60	0.67	0.01	0.08	0.12	2.45
Percentages Central	0.53	0.38	48.69	1.97	0.03	0.23	0.35	7.19
	CHANTABUN							
Ta Mai .. .. .	..	..	..	2.38	..	..	..	3.00
Klong Naraya	2.62	0.48	..	7.21	..	1.12	0.66	0.07

TABLE VIII. D.—(contd.).

Income derived from Handicrafts.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Salt Making	Jungle Crafts	Transport	Trade Crafts	Entertaining	Medic. Crafts	All Other Crafts	Total Crafts
Bangkok	0.18	4.10	1.71	..	0.28	8.23	19.36
Nontaburi	4.50	3.25	..	31.49	221.93
Chaxerngsao	0.10	1.15	..	0.50	..	11.28	15.69
Dhanyaburi	1.28	0.20	..	..	0.78	7.82
Ayuthia	0.68	2.93	..	..	..	..	13.08
Lopburi	0.20	1.93	..	..	6.25	0.30	11.52
Saraburi	13.11	0.15	0.62	0.25	3.38	4.63	28.78
Supanburi	2.43	0.70	..	1.50	..	3.16	10.08
Uthai Dhani	2.40	8.32	1.50	..	0.40	9.31	26.00
Piteanulok	1.85	0.11	..	..	0.30	4.07	7.07
Bejraburi	1.57	2.61	..	..	..	3.30	13.67
Average Central	2.05	2.11	0.78	0.99	0.96	6.96	34.09
Percentages Central	6.61	6.19	2.29	2.90	2.82	20.42	100%
	CHANTABUN							
Ta Mai	0.63	1.86	..	..	12.57	..	20.44
Klong Naraya	4.14	1.55	..	2.60	..	1.27	21.72

CHAPTER VII.

LABOR.⁽¹⁾

INTRODUCTION.

Commercialization, whether of agriculture or of any other enterprise, leads to a concentration of effort in the hands of the most efficient operators; and this concentration makes necessary the employment of human labor.

In self-subsisting areas, where each household produces what it needs and no more, land values remain low as no household requires to own more than a certain minimum amount of productive land for each consumer in the household. When crops begin to be raised for sale there is no limit to the amount of land which any household desires to own, as the production which is in excess of household needs can be sold. In the self-subsisting areas, then, land values are low and every household can afford to own its farm land: in commercialized areas there is scarcely any limit to the land values which may obtain, and it is much more difficult for the young and poor farmer to obtain his own land.

The result of this situation in the commercialized areas is that the landless farmer must find employment, and that the farmers who own much land must employ labor to operate the fields which they and their families cannot personally operate. Agricultural labor is developed in this way, and other forms of labor are brought into being by almost parallel factors in other occupations.

(1) "Labor", as used in this report, indicates unskilled labor. Skilled labor scarcely exists in rural Siam, as nearly all persons employed in skilled or semi-skilled occupations are paid on a share basis. In those few cases where wages were paid for semi-skilled or skilled labor the income earned was classified under "Handicrafts" together with income earned by independent or share basis occupation in the same activity.

Agricultural labor contracts in rural Siam are extremely difficult to analyze. The land-owner often turns over a certain amount of his land to a poor farmer and arranges that the crop produced on the land shall be divided between himself and the laborer. There are many variations of this procedure, and it is often impossible to decide whether the arrangements should be considered as land rental or labor contracts.

In cases where a specific amount in cash or commodities has been paid for the performance of a specific type of work the contract was treated by the Survey as a labor contract. In cases where the laborer took full responsibility for the farming of the land and agreed to pay a specific amount or a specific percentage of the crop to the land-owners, the contract was treated as a land rental agreement. Intermediate cases were decided in the field and according to the judgment of the investigators. When it happened that the land-owner assumed direction of the work in his land and supplied the necessary equipment it was decided that the agreement should be treated as a labor contract even though, in some cases, the laborer was to collect the crop and return a specified amount of it to the landlord.

Other forms of labor were more easily analyzed as they were chiefly on a wage basis. Such were work on railways, highways, in mines, and the like. Skilled occupations such as weaving and fishing were considered as handicrafts rather than as labor even in those few cases where wages were paid. The data, therefore, indicate income which can be earned by any rural Siamese without special knowledge of any handicraft.⁽¹⁾

The divisional figures for average income from labor are as follows:

DIVISION	Agri-cultural	Railway and Highways	All Others	Total Income from Labor
North-east	0.93	0.38	0.26	1.57
South	1.22	3.13	1.58	5.93
North	2.22	1.86	1.44	5.52
Center	6.26	0.82	1.34	8.42

(1) Knowledge of rice cultivation is, of course, part of the general equipment of every rural Siamese.

In all areas the income from labor is between 4% and 9% of total yearly earnings. It is evident that unskilled labor is not very important in rural Siam.

Both Thai and Lao deeply desire to be their own masters, to farm their own land, and to be wholly free of any outside compulsion as to the hours when they will work. When they must turn to labor as a source of income it is agricultural labor which they generally undertake as, in that type of labor, they are employed as a rule to do a certain piece of work and remain fairly free to select their own hours of work. Non-agricultural labor carries with it the tedium of required hours and is most antipathetic to Siamese in general.

Agricultural labor in Siam is chiefly performed by Siamese men and women. Chinese rarely raise rice in Siam as they find they can earn much more by specializing in market vegetables: they do not commonly perform agricultural labor on wages even for each other, and they are almost never employed as agricultural laborers in rice cultivation.

Non-agricultural labor in Siam is chiefly performed by Chinese: they have much less objection to compulsory hours and hard labor than the Siamese. It is safe, probably, to estimate that Chinese make up roughly 70% or more of the non-agricultural laboring population of Siam if the hill tribes employed by the timber industries are omitted from consideration. Perhaps 15% of this population consists of middle-aged Siamese men who have no land or resources of their own and whose general lack of progressiveness makes it difficult for them to earn in any other way. Another 10% of the same population may consist of Siamese women, chiefly widows and unmarried daughters, who are forced to obtain employment as unskilled laborers in order to support dependents or to obtain a little spending money; and the final 5% may consist of energetic and progressive young Siamese men who are willing to work hard for a short time in order to procure the funds which will enable them to set up as independent farmers or craftsmen. These percentages are, of course, only very rough estimates based on general impressions in all parts of rural Siam and it is possible, if

not probable, that they are wide of the mark. Statistics are not available.

The divisional data presented above show that agricultural is the most important form of labor in the North-east and Center, while non-agricultural labor has greater importance in the South and North. The reasons for this are clear. In the North-east communication is poor and there is no opportunity of importance for the people to obtain employment as non-agricultural laborers. In the Center commercialized agriculture and high land values make agricultural labor important: there are no highway developments to speak of and there are many Chinese to perform such hard labor as the area employs. In the North and South agriculture has not become commercialized to a great degree, and the continued development of highway communication offers opportunities for non-agricultural labor.

Let us turn briefly to the regional data presented in the tables at the end of this chapter.

In the North-east agricultural labor is most important in the Khukan community. The inhabitants of this village have become greatly impoverished in the past few years as a result, apparently, of the imposition of taxes which they are unable to pay and of the loss of a considerable market for garden produce which they had during the brief period while the railway was being put through within a few kilometers of the village. They have liquidated most of their valuable property and over half of the families studied earned small amounts in 2476,—in order to pay their taxes,—by various odd jobs of an agricultural nature.

In the Nagor Rajasima and Khonkaen communities the higher incomes from agricultural labor are the corollary of their greater agricultural activity. These two villages had the highest incomes from crops in the North-east.

Income from non-agricultural labor was highest in the Nagor Rajasima community as a result of the activities of two young sons of a single household who spent a few months of 2476 on monthly wages in the Changvad center.

In the South we note a high figure in the Songkla village and a low one in that near Pattani. The former was principally due to labor on highways and railroads, and was about evenly divided between these two sources. The latter was due to the fact that the Pattani village is primarily a trading village and fairly well-to-do: few households of this community needed to perform any labor on wages at all.

The variations in the other Southern villages are not of any great importance.

In the North we find agricultural labor most important in the four villages of Changvads Chiangmai and Lampun. Rice production is more extensive in these regions than elsewhere.

Railroad and highway labor is most important in Na Kuam and Mae Kami. In the former it was due chiefly to railroad work, and in the latter to highway labor.

"All Other" labour was most important in San Mahapon where it was chiefly due to work on a new dam, and in Na Kuam where it was principally from unskilled labor performed by the man in assisting constructors to put up some new masonry,—probably for a new temple.

In the Centre the figures for agricultural labor seem highest the Bangkok, Chaxerngsao, Dhanyaburi, and Bejraburi communities. In the village near Bangkok the agricultural labor was of many varieties: in the other three it was chiefly in rice agriculture. It seems likely that the figures in these villages are due to the small amounts of land owned by a number of individual households and the danger, in a period of low prices, of renting land which may not be sufficiently productive to cover the rentals. In Nontaburi the only labor performed by members of the families studied was in connection with the pottery industry.

Opportunities for railway and highway labor are practically lacking in the Center and, where available, are chiefly taken by Chinese who make much better laborers than Siamese. In the Bejraburi village two families were found who had sent young sons to work on a monthly wage basis for a part of 2476 with the railways.

In the Bangkok village we find a number of men and women who worked on wages during 2476 in rice-mills, on irrigation projects, and as domestic servants. In the village near Uthai Dhani there was one man who had quarried rock and sand,—presumably for highways or temple construction,—and who had been paid according to his production:

In the South-east we find no railway or highway labor in the two villages studied. A considerable amount of agricultural labor was performed but in Ta Mai, where the most is used, we find only a small amount going to Siamese householders. The pepper plantations employ many Chinese. In Klong Naraya the income from "All Other" labor was almost wholly earned by a single individual who found employment in irrigation work.

CONCLUSIONS.

We have examined the labor situation in rural Siam very briefly, and it is certainly one which does not call for much comment. Siam is likely to be fortunate for many years to come in having none of the labor problems which are so great a source of worry to-day to the industrial nations.

The Siamese people plainly do not like to perform arduous daily labor on wages, and are very ready to leave this field of occupation to Chinese immigrants. In regions where economic conditions are very bad the rural Siamese perform various odd jobs in order to earn the cash to pay taxes and, in many cases, they find it easier to perform labor for the government than to pay taxes. Sometimes, even, they make money at this: the government supplies them with a daily food allowance while they are working off their head taxes and most of them save this allowance for other purposes and consume their own home-produced food.

The fact that so much of the labor is performed by Chinese need not be a source of worry to patriotic Siamese. Aside from the fact that Siamese in general will not do this work, the Chinese bring to the rural districts a tradition of energy and assiduity which will do no harm to the population at large. In the preceding chapter we

have seen that the Siamese do take to such semi-skilled tasks as are involved by mechanized transport and that they are not likely to be ousted from these tasks by Chinese. The fact that Chinese continue to do the hard work of paddy transport by water and of daily labor on the highways and railways need be the occasion of no anxiety to the nation.

TABLE IX. A.

Income derived from Labor.

NORTH-EAST SIAM.

REGION	Agri- cultural	Railway and Highways	All Others	Total Income from Labor	Percent- age of all Annual Income
Nongkai .. .. .	..	..	..	..	..
Udorn	0.25	0.25	0.53	1.03	5.54%
Khonkaen	1.26	..	..	1.26	5.22%
Pu Vieng	0.14	..	..	0.14	1.13%
Sakolnagor	0.73	..	0.19	0.92	6.53%
Ubol	0.54	..	0.40	0.94	6.88%
Khukan	2.83	..	0.84	3.67	48.33%
Nag. Rajasima	1.71	2.77	0.10	4.58	11.88%
Average North-east	0.93	0.38	0.26	1.57	5.20%
Percentages North-east	59.24%	24.20%	16.56%	100.%	..

TABLE IX. B.

Income derived from Labor.

SOUTH SIAM.

REGION	Agri- culture	Railway and Highways	All Others	Total Income from Labor	Percent- age of all Annual Income
Naradhivas	1.13	2.74	0.04	3.90	14.38%
Pattani	0.49	0.50	..	0.99	0.66%
Songkla	1.29	11.87	4.75	17.91	30.82%
Trang	2.41	5.63	1.67	9.71	17.25%
Nag. Sridhamaraj ..	0.44	1.17	2.66	4.27	12.68%
Surat	0.61	..	1.72	2.33	3.14%
Jumbor	2.16	..	0.25	2.41	2.07%
Average South	1.22	3.13	1.58	5.93	8.00%
Percentages South	20.57%	52.78%	26.64%	100.0%	..

TABLE IX. C.

Income derived from Labor.

NORTH SIAM.

REGION	Agri- cultural	Railway and Highways	All Others	Total Income from Labor	Percent- age of all Annual Income
Chang Puak (Chiengmai)	3.10	1.26	1.16	5.52	16.34%
Mae Hiah (Chiengmai)	4.42	..	1.31	5.73	12.05%
San Mahapon (Chiengmai)	2.94	1.32	4.34	8.60	5.35%
Lampun	5.26	0.87	1.52	8.15	8.91%
Na Kuam (Lampang)	1.32	8.85	3.34	13.51	11.94%
Ban Sadej (Lampang)	1.68	1.36	1.88	4.92	18.77%
Chiengrai	1.85	0.10	0.89	2.84	6.23%
Chiengsen	1.21	..	0.40	1.61	4.80%
Pa Daeng (Prae)	1.32	0.50	..	1.82	5.28%
Mae Kami (Prae)	0.66	6.15	0.73	7.54	20.26%
Laplae	0.21	..	0.33	0.54	0.57%
Average North	2.22	1.86	1.44	5.52	8.47%
Percentages North	40.22%	33.70%	26.09%	100%	..

TABLE IX. D.

Income derived from Labor.
CENTRAL AND SOUTH-EAST SIAM.

REGION	Agri- culture	Railway and Highways	All Others	Total Income from Labor	Percent- age of all Annual Income
Bangkok	12.02	0.71	5.63	18.36	11.83%
Nontaburi .. .. .	..	..	0.90	0.90	0.19%
Chaxerngsao	10.28	..	0.89	11.17	8.88%
Dhanyaburi	15.61	..	0.98	16.58	6.25%
Ayuthia	4.54	..	0.37	4.91	1.90%
Lopburi	4.89	..	0.12	5.01	2.54%
Saraburi	1.51	..	0.32	1.83	1.45%
Supanburi	4.95	..	..	4.95	3.64%
Uthai Dhani	3.19	..	4.69	7.88	7.09%
Pitsanulok	1.40	..	..	1.40	2.00%
Bejraburi	10.52	8.30	0.88	19.70	16.28%
Average Central	6.26	0.82	1.34	8.42	4.55%
Percentages Central	74.85%	9.74%	15.91%	100%	..
	CHANTABUN				
Ta Mai	2.50	..	0.70	3.20	0.58%
Klong Naraya	5.89	..	5.12	10.94	9.74%

CHAPTER VIII.

TRADE.

INTRODUCTION.

It is trade which makes it possible for the Siamese farmer or fisherman to sell his produce. Without the traders and the markets his surplus produce would be useless to him as he could not exchange it for money or other commodities which he required. It is therefore quite futile,—and quite impossible,—to develop the production of crops, of fisheries, or of handicrafts and industries, unless trade is developed to supply the exchange of goods which alone will make improved production profitable. As in the case of all other activities, we may be sure that the future expansion of trade and commerce will be determined largely by the existing situation; so it is desirable for us to examine the way in which goods are sold and exchanged in rural Siam to-day.

The most important business of the nation, its foreign trade, is not in the hands of Siamese at all. The firms which handle the business are Chinese, European, Indian, and Japanese: very few Siamese have anything to do with it. All admit that this is not a desirable situation for Siam.

The most important part of the internal trade of the country is in the hands of Chinese and Indians, but Siamese,—especially the women,—are showing some enterprise and ability as traders. The internal trade of Siam,—that concerning which the Survey has collected first hand data,—must be divided into two distinct categories. The first includes the trading which is done for a few hours of every morning in the markets, and the second is the trade which is on a more permanent basis and is carried out in shops and stalls. We will term the former "Small Trade", and the latter "Store-keeping".

Small Trade is handled almost entirely by Siamese women. The farmer himself rarely does any trading at all save when he deals with the rice buyers or is obliged by some unusual circumstances to find a buyer for some other produce. He does not buy or sell in the markets, and he rarely opens shops of any description.

The Siamese women of the rural districts go to the markets every morning. They take with them fish, fruits, vegetables, condiments, and cooked foods for sale or barter; and they bring home with them such supplies as the household has not produced for itself and a small amount of money. They do not trade during the whole day in the markets, and they do not often open permanent shops or stalls except under unusual circumstances, such as the death of a husband, when they may find themselves obliged to find new or better sources of income.

It is probably safe to say that at least half of the households of rural Siam send one or more women to market every morning. Most of the income derived from the sale of vegetables and fish, and a large part of that from the sale of fruits, betel-nut, and tobacco is obtained in this way. All of the income described as from "Food Crafts" in the chapter on Handicrafts was earned by women who sold their cakes and sweets in the markets or on the communication routes.

In this chapter, however, we are not concerned with this type of income. By "trade" we mean buying and selling at a profit, and so the income which we will consider as from trade will not include the value in money or goods obtained by selling home-produced fish and produce, but will include the net profits obtained by individuals who have bought goods,—usually from neighbors,—and have sold them at a profit in the markets or shops. It is evident that this is the first way in which trade develops, and it is of considerable interest and importance for that reason.

Storekeeping is rarely done by Siamese at all. The Chinese operate butcher shops, cook shops, silver shops, tailor shops, hardware shops, and general stores in which nearly anything can be bought. The Indians are almost always engaged in selling imported textile goods. The Burmese traders sell lacquer, cutlery, and a few other goods of Burmese or hill-tribe origin.

In some communities, however, Siamese have opened stores from which they obtain the major part of their income. Since this is rarely found in Bangkok, and since it is desirable that Siam should produce its own business men and traders, we must find out to what degree this happens and what are the factors which lead to it.

Some of the villages which were studied had no permanent stalls or shops at all. Some which had a few stalls were not represented in the random sample of forty families studied by the Survey. In a few, perhaps, the storekeepers were slightly over-represented in the sample. Thus it may be that the data do not give a wholly true picture, in some communities, of the relative importance of store-keeping in the village; but it is likely that the data on small trade are more exact.

In general we may safely consider that the data do give a true picture of the relative importance of trading in the different communities, though we are ready to admit that the data may not, in all cases, show accurately the relative importance of trading within the economy of the individual community.

INCOME FROM TRADING AND STOREKEEPING.

Before turning to the data, it must again be urged that the data do not represent bulk of trade: they present simply average net profits from trading per householder. Sale and exchange of goods produced by the trader is not here involved, and it is this which makes up the great bulk of trade in the morning markets.

It must also be remarked that "Small Trade" has usually been carried on by from five to fifteen individuals in the sample of forty, and that "Storekeeping" usually represents the operations of only one to five individuals. The individual profits of the storekeeper are almost always higher than those of the small-trader.

The divisional data are as follows:

DIVISION	Small Trade	Store-keeping	All Trade	(Percentage of all Annual Income)
North-east	1.08	0.63	1.71	5.67%
South	4.79	13.81	18.10	24.42%
North	3.22	9.30	12.52	19.18%
Center	4.04	7.93	11.97	6.46%

In the North and South, where highway communication is best, the average rural household derives from one fifth to one quarter of its yearly earnings from net profits on trading operations. In the North-east there is very little trade; and in the Center, where communication must be by slow water transport and where most of the trading is done by Chinese in the urban center, trade is of little importance to the Siamese farmer.

Regional data are given at the end of this chapter.

In the North-east we find evidence in our data of storekeeping only in the community near Nongkai. This is a true picture of the situation. In most of the other villages studied by the Survey there were no permanent trading depots at all, and even in the biggest of them there were not more than one or two very small stalls which were operated as adjuncts to the farming business by farmers' wives. They were really nothing more than permanent depots of salt, chillies, charcoal, tobacco, and matches.

The Nongkai community was almost adjacent to the Changvad markets, and it had good communication with Udorn and Viengchan. Trade, therefore, was relatively highly developed; and we find three of our forty households operating permanent shops or stalls. One household was Siamo-Chinese, and the other two were Lao. All three traded in chickens, plara, fruits, chillies, betel-nut, dried fish, salt, charcoal, eggs, and the various accessories to betel chewing such as sera leaf, sisiet, catechu bark, cassia bark, lime, and wax. Individually they were making annual profits on their trade of Baht 31.50, Baht 50.00, and Baht 120.00.

In general, the small trade of all the villages was of the same nature. Farmers' wives bought surplus fish and garden produce from neighboring households, took it to the morning market, and sold it at a small profit.

In the Sakolnagor community the average income from small trade was raised by one farmer who bought a number of bullocks at depression prices and managed to sell them at a slightly higher figure in the Changvad center, and by another who bought dead bullocks, skinned them, and sold the hides and horns.

In the Nagor Rajasima village, the small trade average was

raised by one woman who walked once a month to the markets of the Changvad center, bought commercial supplies, and carried them back to the village for sale at a profit. This operation may be regarded as intermediate in character between small trade and store-keeping: it is an indication of the way in which a village with only small trade gradually develops shops with commercial goods.

Except in the Sakolnagor community,—where cattle disease and forced liquidation of bullocks at low prices made a special opportunity,—we can see a pretty definite correlation between the development of trade and communication. Trade is definitely better in the communities near big market towns than in those which can communicate with the bigger trading centers only by long and tiresome journeys by bullock cart.

In the South we find storekeeping highly developed in the Pattani community, somewhat less so in that near Jumbor, and almost or wholly absent in the other villages.

The Pattani village, Pao Yudh, was about twelve kilometers distant from the Changvad center on a main highway, and it was situated in a region of productive rubber and copra plantations. It supported a large market which furnished commercial and other supplies from the Changvad, and which bought rubber and copra from the plantations for the export trade of Pattani. Our forty families included eight which kept shops near the markets, and which obtained from their trade in commercial goods and raw rubber yearly profits which in 2476 ranged from Baht 54.00 to Baht 980.00. Eleven other families traded in the market for smaller but still important profits in garden and other local produce.

The Jumbor community can communicate with the markets of the Changvad center by a well-surfaced road which passes within a few kilometers of the village. Along the good road there are a number of small markets. Crop failures, leading to a great decline in income, have obliged the folk of this village to turn to fishing and pig raising for supplementary income: the results of their activities they sell in the markets. The distance from the village to the market has made it profitable for a number of households to buy the produce of others and to transport it to the markets for sale at a

profit. Five members of this village have opened small permanent depots for garden produce, and one sells a few commercial goods obtained from Jumbor itself. Their profits in 2476 ranged from Baht 55.60 to Baht 151.60. Small trade was very important,—because of the distance to the markets in this case,—and we find one household which sent two women almost daily to the Changvad center with local fish and garden produce. The activities of these two women of a single household brought in a profit of Baht 160.00,—an amount slightly in excess of the highest storekeeping profit earned in the village.

In the other Southern villages we find the trade almost wholly confined to the morning markets where it is of the type which we have described as typical of "Small Trade".

Correlation between trade and communication seems not to be so close in the South as in the North-east: there are a number of villages which had better communication than the Jumbor community and which did less trading. Pao Yudh, near Pattani, had the best communication and the most favorable situation: it had the most trade. The Jumbor village appears to have expanded its trade as a result of a necessity which was not felt so strongly elsewhere.

In the North we find, as in the South, one of our villages which has developed trade to a high degree,—San Mahapon. This community,—like Pao Yudh in Pattani,—is strategically well situated and is on an important good highway. In the other villages of the North trading appears to be on a low plane of development.

There is one important and good highway which runs North from Chiengmai to Muang Fang on the frontier between the Shan States and Siam. The route has long been one of the most important in the North: it was made use of by Shan and other traders whose bullock caravans followed the valleys of the tributaries to the Me Ping river. Various Burmese produce and rice from the Northern Siamese valleys flowed down the route to Chiengmai in bullock carts, while commercial produce moved North in the same way. The two important stops on the route were San Mahapon and Chiengdao. When the road was surfaced from Chiengmai to San Mahapon many of the trade caravans and most of the rice stopped at San Mahapon

on the way South to transfer the produce to motor lorries. Trade developed at San Mahapon to take care of the needs of the traders and middlemen, and we find in our sample of forty families from this village nine households with permanent stalls or shops. Some of these were Siamo-Chinese, but most of them, including the foremost business man of the community, were Lao. Four of them had become full time traders who no longer grew their own rice but depended on their business profits entirely. The maximum profit of an individual in 2476 was Baht 1,520.00.

It is interesting to note that here, as in the Jumbor and Pattani communities, the presence of real trading opportunities has caused a number of farm families to expand their morning market operations by a considerable amount of actual trading.

In the other Northern communities we find most of the trade is simply a small scale development which proceeds from the usual market sales of local produce. In each of four communities we find a single household which has opened a permanent stall for the sale of matches, salt, charcoal, betel-nut, and the like.

In the Center the trading operations are of a slightly different type as a result of highly commercialized rice agriculture and almost total absence of highway communication. The two factors interact in such a way that there is difficulty in deciding what their individual effects may be.

Highly intensified rice culture leads without doubt to important rice collection, milling, and shipping centers. In these, naturally, there is the greatest development of commerce. The presence of a laboring population engaged in transporting and milling rice creates a demand for the various food products which the farmers raise for themselves. There is, therefore, an expansion of market trading in these centers. Since many paddy boats go down river loaded and return empty, it is possible to bring up river various commercial goods at a very low transport costs. Another factor which leads to low transports cost is the fact that the paddy boatmen prefer to come up river with their assets in the form of supplies: there is less risk of robbery. Commercial trade therefore develops in the rice milling centers as well as does trade in garden produce.

Enforced water transport means very slow communication. A San Mahapon shopkeeper can travel fifty kilometers to Chiangmai; get his month's supplies on credit, and return to his shop all on the same day. The same operation, if performed by a shopkeeper in a village of the same size in Central Siam fifty kilometers from the nearest big market center, would require from five to ten days. It is very clear that this man cannot trade as well as his Northern cousin.

The result of this slow communication by water is that the goods sold in small villages must have come from the biggest distribution point in large boats to a smaller center; and there they must have been trans-shipped to smaller boats and taken to a still smaller center. The process goes on, and the cost of transportation to a small village in the Central Division is likely in the end to be higher than the cost of transportation by rail and highway to a small village in North Siam. The transport itself is infinitely slower, perishable goods cannot be taken, and the chances of incidental damage to the shipment in the course of handling are fairly high.

The two forces, as said above, interact; and they result in an uneconomic magnification of the importance of a few centers, and a great diminution of the opportunities for profitable trade in the small villages. Rural Siamese of the Center, therefore, have little incentive to embark in trading operations and, what is still worse, they are often obliged to pay uncompetitive prices for their supplies. Where there is only one trader, and the nearest market center is several days distant, the farmer must pay what the trader asks if he buys at all.

Storekeeping in Central Siam is almost wholly the province of the Chinese. Small trade is chiefly limited to those villages which are near enough to large market centers so that the women can collect garden produce and aquatic vegetables, paddle them to market, and sell them there. Retailers of commercial goods paddle their canoes from village to village and sell what they can at each place: they are chiefly Chinese, as the hope of financial gain rarely impells a Siamese to spend his life at hard labor on the steaming hot surface of the rivers.

In the Nontaburi village we find a high average income from trade. Most of it proceeds from a few individuals who trade in food and commercial supplies: the community produces pottery on a large scale, sells no rice, and buys a high percentage of the food it consumes. Since it is near to Bangkok and sends out much pottery in boats, it need pay very low transport charges for supplies which are brought to the villages in the pottery barges which, otherwise, would return empty.

In the Dhanyaburi community our sample included a Chinese butcher who bought pigs, slaughtered them, and sold pork. This accounts for the whole of the income from storekeeping.

In the village near Lopburi the sample included one Chinese who kept a permanent stall for the sale of chillies, salt, charcoal, and the usual small produce. This business netted him only Baht 10.00 during 2476; but it kept him in good contact with the villagers from whom he bought rice, and his profits on rice trading amounted to Baht 1,200.00. This man bought rice from the villagers, stored it in his shop, arranged with another Chinese for its transport to the mills, and divided with him the profits.

In the Saraburi community we find two Siamese doing a small shopkeeping business in salt, charcoal, pottery, chillies, and the usual supplies.

The small trade of the Central villages is all of the same type. Farm women collect fish and garden produce from neighbors, paddle it to the nearest morning market, and sell it at a slight profit.

It is plain that the small trade of Central Siam is limited in each village by the length of time which is required to paddle to the nearest market. Sales of garden produce, fish, and poultry are limited by the same factor. Storekeeping is practically non-existent in the farming villages of the Center except when it is done by Chinese rice-traders as a means of keeping in close contact with the rice growers and with the advantage of being able to bring supplies to the village in the same boats which will take away the rice.

If the Survey had studied one of the rice-milling centers it would have found a high income from storekeeping and a still higher income from rice-trading in the hands chiefly of Chinese.

In the South-east we find practically no trade in the two villages studied. One man in Ta Mai kept a small shop for the sale of pepper-plant medicines and tobacco, while the other households of the village went to market only to sell their produce. In Klong Naraya there was almost no trade,—none at all among the families studied,—because the village is far distant from the Changvad center on an almost impassable cart track. The villagers go to the Changvad market to sell rice and fruits a few times a year, they barter fruits and the like in the local market, and they trade not at all.

THE FUTURE OF SIAMESE TRADE.

No one can doubt that the economic development of the Kingdom must entail an expansion of trade and commerce, but it is possible for some patriotic Siamese to state that trade and commerce are in the hands of foreigners, that they will inevitably keep pace with improved production, and that they should not be encouraged save in the hands of Siamese. Let us consider these propositions.

It is certainly true that Chinese and other foreigners perform nearly all the trading which is done in Siam. Very few if any Siamese are engaged in commerce on a large scale in Bangkok and, relative to their numbers, very few rural Siamese are engaged in shopkeeping. What are the reasons for this?

The Siamese farmer has behind him an ancient tradition of rice cultivation and self-sufficiency. Like the peasants of all countries, he is extremely conservative and has no desire to embark on any enterprises which have not been practised by the generations before him. Money, in itself, has little fascination for him; in most parts of Siam he really *requires* money only to pay his taxes. Even if he has no money at all, he will not starve; and he will not suffer from want of clothing or housing. If he can't pay his taxes, he can't; and that's usually the end of it.

The Chinaman comes to Siam from a country where starvation and suffering from want of clothing are all too common. He has had to expend his full energies on the problem of keeping life in his body in a community where there are more hungry people than well fed ones. The Chinaman who comes to Siam has all the energy of his

countrymen, and he is likely to have more enterprise than most of them. Otherwise he would not have decided to leave his family for a more pleasant land, and he would not have been able to raise the money for his journey. Trade and business are almost as much a part of his heritage as agriculture, and he has been obliged to put far more energy into them than any Siamese. It is not surprising, then, that he sees in trade better opportunities for making money than in agriculture, and that he is able to do better with his trade than his Siamese competitor. This is the situation in rural Siam, and the fact that a number of Lao and a few Thai have been able to learn business methods and hold their own against Chinese competitors is definitely encouraging.

In Bangkok there are many Siamese who place a high value on money, but these are people whose traditions of high social standing prevent them from going into commerce on the small scale of the newly arrived Chinese. Although many are well educated and highly intelligent, none of them have had the practical experience in business which is absolutely essential if they are to compete with foreign Asiatics and Europeans. They cannot learn to deal in rice, the most important Siamese produce, because Bangkok does not deal directly with the world rice markets; and there is little real incentive for them to learn import businesses which deal chiefly with foreign produce, because that trade is naturally handled by people of the producing nations.

No man can learn to be a good business man by studying courses in economics in foreign universities: he must apprentice himself to the business itself and must know intimately every phase of the trade and every market for his produce. When the Port of Bangkok is developed the capitol of Siam will become one of the great rice ports of the world, it will deal directly with all nations, and there will be an opportunity for young Siamese to learn to play their rightful part in a business which should be particularly their own.

These facts explain why it is that the Siamese to-day are not traders.

It is true that trade and commerce will develop alongside of

improved production whether encouraged or not. They will, however, stagnate and lag behind production if communication is not improved. By their stagnation they will prevent the farmers from realizing the benefits which should accrue to them, and they will hold back the development of new technical methods and expanded production.

The belief that trade developments should not be encouraged save when they are in the hands of Siamese deserves to be investigated. It is necessary to determine how and to what degree trade developments can benefit the farmers if Siamese do not themselves partake in the trade or obtain direct cash rewards from trading operations. The answer to this question was presented very clearly by a Lao shopkeeper of San Mahapon in North Siam.

Nai.....had been operating a shop in San Mahapon for a considerable number of years. When he first went into business the road to Chiengmai was an unsurfaced cart-track, and he was obliged to spend several days in travel every time that he required to go to Chiengmai for a new consignment of goods. His profits, nevertheless, had been large: the neighboring farmers had to buy their supplies from him and he could ask whatever prices he pleased. His business turnover was small, but his profits were considerable.

Later on the road to Chiengmai was surfaced. Caravans stopped at San Mahapon to transfer their rice to motor lorries, motor buses began to operate between San Mahapon and Chiengmai, the annual business turnover of Nai.....'s shop was much greater and he found he could go more often to Chiengmai and obtain his goods in better condition and at lower transportation charges.

"Unfortunately", said Nai....., "I was then obliged to cut my prices. The farmers of San Mahapon found they could stand in the road in front of their houses, wave to the passenger bus, and travel to Chiengmai for a day of rest and recreation at very small expense. While in Chiengmai they found many things in the markets which they could not buy from me in San Mahapon, and they found they could buy the things which I do sell at a lower price in Chiengmai. I was obliged to cut my prices and, although I

now go twice a month to Chiengmai and bring back big consignments of goods, my yearly profits are much smaller than they were".

We can afford to be a little sorry, perhaps, for the business losses which Nai.....and his many Chinese confreres have suffered; but we must admit that he has shown us just how the farmers have profitted by the San Mahapon-Chiengmai road and by the resulting increase in trade.

We may safely conclude that:

Improved trade is of great advantage to the Siamese farmer even when the Siamese themselves do not trade. Improved trade permits the farmer to buy more and better supplies, it gives him a better sale for his produce, and it allows him to buy necessary supplies at competitively low prices.

We may now ask, "What are the factors which help trade to develop?"

Good highways, we have seen, are essential. The railways will not serve except for trade on a large scale,—shipments of agricultural and commercial produce in bulk: they are too expensive and run too infrequently for rural Siamese to use them regularly as they do the motor buses, and they cannot profitably be carried into every farming district. Water transport fails because it is much too slow except for bulk shipments of non-perishable produce, and because it necessitates frequent trans-shipment if goods are to be supplied in small wholesale quantities to districts far from the big rice-milling centers.

Siam cannot develop trade and commerce throughout the length and breadth of the Kingdom except by the building of well-surfaced highways suitable for motor-transport.

Still another factor is needed: we have seen villages in Siam, especially in the South, where good highways did not mean significant trade expansion. This other factor is increased demand. It will never be possible for every household to engage in trade, and it will not for many years be possible for every village to develop trade. The big towns with rail communication are the first centers in which trade develops: they are distribution centers for commercial goods and collection centers for agricultural and other local

produce. After them in importance come the highway centers such as San Mahapon and Pao Yudh which are strategically situated on trade routes or in highly productive regions. They collect the produce of the farming population and sell to the farmers commercial goods: they send local produce to the rail centers and bring from them commercial goods.

Supply of local goods and demand for non-local goods grow side by side. They are at the same time a result of trade and a cause of trade. It is their interaction which, following improvement of communication, results in an expansion of trade which is far greater than that which would result simply from the presence of a floating population engaged in passenger and mail transport.

It is greatly to be hoped that the government's program for highway development will be pushed as far and as fast as possible in the provinces. We may be sure that commercial activity will spring up in every farming district which feels this stimulus.

TABLE X. A.

Income from Trade and Store-keeping during 2476.

NORTH-EAST SIAM.

REGION	Small Trade	Store-keeping	Total Income from Trade	(Percentage of all Annual Income)
Nongkai	3.50	5.04	8.54	7.59%
Udon	0.23	..	0.23	1.20%
Khonkaen	0.15	..	0.15	0.62%
Pu Vieng	0.18	..	0.18	1.43%
Sakolnagor	1.99	..	1.99	14.12%
Ubol	0.49	..	0.49	3.58%
Khukan	0.44	..	0.44	5.76%
Nag. Rajasima	1.69	..	1.69	4.37%
Average North-east	1.08	0.63	1.71	5.67%

TABLE X. B.

Income from Trade and Store-keeping during 2476.

SOUTH SIAM.

REGION	Small Trade	Store-keeping	Total Income from Trade	(Percentage of all Annual Income)
Naradhivas	0.84	..	0.84	3.12%
Pattani	8.02	77.71	85.73	56.14%
Songkla	2.89	1.50	4.39	7.56%
Trang	0.23	1.50	1.73	3.17%
Nag. Sridhamaraj	3.98	..	3.98	11.82%
Surat	2.21	..	2.21	2.96%
Jumbor	15.38	12.43	27.81	23.90%
Average South	4.79	13.31	18.10	24.50%

TABLE X. C.

Income from Trade and Store-keeping during 2476.

NORTH SIAM.

REGION	Small Trade	Store-keeping	Total Income from Trade	(Percentage of all Annual Income)
Chang Puak (Chiengmai)	0.40	..	0.40	1.18%
Mae Hiah (Chiengmai)	4.15	..	4.15	8.73%
San Mahapon (Chiengmai)	11.25	82.75	94.00	58.53%
Lampun	4.24	..	4.24	4.63%
Na Kuam (Lampang)	8.75	..	8.75	7.73%
Ban Sadej (Lampang)	0.03	4.72	4.75	18.10%
Chiengrai	0.85	5.25	6.10	13.41%
Chiengsen	1.12	..	1.12	3.35%
Pa Daeng (Prae)	0.05	..	0.05	0.14%
Mae Kami (Prae)	0.52	6.53	7.05	18.94%
Laplae	4.02	3.10	7.12	7.54%
Average North	3.22	9.30	12.52	19.18%

TABLE X. D.

Income from Trade and Store-keeping during 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Small Trade	Store-keeping	Total Income from Trade	(Percentage of all Annual Income)
Bangkok	6.48	2.59	9.07	5.84%
Nontaburi	5.66	27.32	32.98	6.98%
Chaxerngsao	1.61	..	1.61	1.29%
Dhanyaburi	1.75	16.00	17.75	6.69%
Ayuthia	8.29	1.24	9.53	3.70%
Lopburi	6.24	30.25	36.49	18.99%
Saraburi	2.09	9.78	11.87	9.46%
Supanburi	1.90	..	1.90	1.40%
Uthai Dhani	8.77	..	8.77	7.89%
Pitsanulok	1.12	..	1.12	1.61%
Bejraburi	0.56	..	0.56	0.46%
Average Central	4.04	7.93	11.97	6.49%
	CHANTABUN.			
Ta Mai .. .. .	..	3.00	3.00	0.55%
Klong Naraya .. .. .	..	..	..	..

CHAPTER IX.

ANNUAL INCOME DERIVED FROM PROFESSIONAL, GOVERNMENTAL, AND "ALL OTHER" SOURCES.

INTRODUCTION.

In this short chapter we must give brief consideration to those few sources of annual income which have not already been discussed. Those of them which are classified as "Professional" include income earned by school teaching, practice of law, and a few other occupations which will be described in the course of the discussion. Those sources which are classified as "Governmental" include pensions, government salaries, and commissions earned by local officials in the collection of taxes. The "All Other" sources of annual income include yearly earnings from unspecified sources:—they consist of small sums which had been earned by children in ways unknown to the householder and which had been contributed to the household: there are very few of them as the householder usually knew accurately how his children had earned such contributions to the family as they made.

All of these ways of earning money are of little importance to the rural Siamese. They are quite outside the scope of the average farmer and are found, in general, only in those towns which are closest to the Changvad centers. School teachers and government officials, although they are found even in the most distant and isolated provinces, from a very small percentage of the rural population. Professional men can operate only in the largest provincial towns.

The divisional data show us the following averages:

DIVISION	Professions	Government	All Others
North-east	3.48	0.60	0.05
South	0.63	0.63	0.03
North	1.02	2.40	..
Center	1.26	2.59	..

These figures are of little significance as they depend wholly on the urban development of the villages selected for study. Too few urbanized communities were studied to give any true indication of the relative importance in the different divisions of professions and governmental salaries.

The regional data are presented in tables at the end of this Chapter.

PROFESSIONAL SOURCES OF INCOME.

The highest average income from professions is found in the Nongkai village. This was due to the presence in the sample from that community of one lawyer who carried on his practice in the adjacent Changvad center.

In one of the two small Pu Vieng villages the sample included a schoolmaster who earned Baht 60.00 in 2476.

In the Pattani community we find two professional Mohammedan hajis who received small sums from their mosques in 2476. In the Songkla community we find the same thing.

The samples included a schoolmaster in the Trang village and a "lawyer" who earned Baht 20.00 in the Surat community.

We find a schoolteacher in the Laplae village, and a professional musician and dancer in that near Lampun.

In the one hundred and fifty six families studied near Bangkok there were two Buddhist and one Brahman schoolteachers. In the Pitsanulok village there was a single schoolteacher.

Thus, in a sample of about 1700 rural Siamese households, including roughly 9000 men, women, and children, we have found seven schoolteachers, two lawyers, three Mohammedan hajis, and one professional musician and dancer.⁽¹⁾

GOVERNMENTAL SOURCES OF INCOME.

In the North-east the village samples included eight local officials who had earned various small sums by collecting taxes, and a single policeman.

(1) No professional practitioners of scientific medicine were found in the samples.

In the South there were fifteen individuals who had earned small commissions on tax collections.

In the North we find a local forestry officer, a postman, and a janitor in an amphur office. The rest of the governmental income proceeded from commissions on tax collections.

In the Center we find two policemen and two military pensioners. Commissions on tax collections accounted for the rest of the governmental income in Central Siam as they did for all of that in the South-east.

ALL OTHER SOURCES.

This income has been commented on in the first paragraph of this chapter.

TABLE XI. A.

Annual Income from Professions,⁽¹⁾ from Government Sources,⁽²⁾
and from All Other Sources.⁽³⁾

NORTH-EAST SIAM.

REGION	Professions	Government	All Others
Nongkai	26.31	..	0.38
Udorn .. .. .	..	2.23	..
Khonkaen .. .. .	..	..	..
Pu Vieng	1.50	0.23	..
Sakonagor .. .. .	..	1.65	..
Ubol .. .. .	..	0.63	..
Khukan .. .. .	..	..	..
Nag. Rajasima .. .. .	..	0.08	..
Average North-east	3.48	0.60	0.05

(1) "Professional Sources" includes income from Teaching, Practice of Law, and from services as a Professional Musician, Actor, or Dancer.

(2) "Government Sources" includes Government pay, Commissions on Taxes collected, and Pensions.

(3) "All Other Sources" includes income from unspecified sources.

TABLE XI. B.

Annual Income from Professions,⁽¹⁾ from Government Sources,⁽²⁾
and from All Other Sources.⁽³⁾

SOUTH SIAM.

REGION	Professions	Government	All Others
Naradhiwas .. .. .	..	0.66	..
Pattani	0.52	1.50	..
Songkla	0.41	0.11	..
Trang	3.00	1.70	..
Nag. Sridhamaraj .. .. .	..	0.34	0.21
Surat	0.50	0.06	..
Jumbor .. .. .	..	..	..
Average South	0.63	0.63	0.03

(1) "Professional Sources" includes income from Teaching, Practice of Law, and from services as a Professional Musician, Actor, or Dancer.

(2) "Government Sources" includes Government pay, Commissions on Taxes collected, and Pensions.

(3) "All Other Sources" includes income from unspecified sources.

TABLE XI. C.

Annual Income from Professions,⁽¹⁾ from Government Sources,⁽²⁾
and from All Other Sources.⁽³⁾

NORTH SIAM.

REGION	Professions	Government	All Others
Chang Puak (Chiengmai) .. .. .	..	..	..
Mae Hiah (Chiengmai) .. .. .	..	..	..
San Mahapon (Chiengmai) .. .. .	..	9.00	..
Lampun	10.00	5.25	..
Na Kuam (Lampang) .. .. .	..	7.20	..
Ban Sadej (Lampang) .. .. .	..	..	..
Chiengrai .. .. .	..	4.90	..
Chiengsen .. .. .	..	..	..
Pa Daeng (Prae) .. .. .	..	..	..
Mae Kami (Prae) .. .. .	..	..	..
Laplae	1.25	..	..
Average North	1.02	2.40	..

(1) "Professional Sources" includes income from Teaching, Practice of Law, and from services as a Professional Musician, Actor, or Dancer.

(2) "Government Sources" includes Government pay, Commissions on Taxes collected, and Pensions.

(3) "All Other Sources" includes income from unspecified sources.

TABLE XI. D.

Annual Income from Professions,⁽¹⁾ from Government Sources,⁽²⁾
and from All Other Sources.⁽³⁾

CENTRAL AND SOUTH-EAST SIAM.

REGION	Professions	Government	All Others
Bangkok	4.81	9.92	..
Nontaburi .. .. .	..	15.28	..
Chaxerngsao .. .. .	..	0.30	..
Dhanyaburi .. .. .	..	0.15	..
Ayuthia .. .. .	..	..	..
Lopburi .. .. .	..	0.54	..
Saraburi .. .. .	..	0.10	..
Supanburi .. .. .	..	0.44	..
Uthai Dhani .. .. .	..	..	..
Pitsanulok	9.00	1.69	..
Bejraburi .. .. .	..	..	..
Average Central	1.26	2.59	..
CHANTABUN			
Ta Mai .. .. .	..	0.75	..
Klong Naraya .. .. .	..	0.16	..

(1) "Professional Sources" includes income from Teaching, Practice of Law, and from services as a Professional Musician, Actor, or Dancer.

(2) "Government Sources" includes Government pay, Commissions on Taxes collected, and Pensions.

(3) "All Other Sources" includes income from unspecified sources.

CHAPTER X.

EXPENDITURES FOR FOOD, CLOTHING, AND HOUSEHOLD.

INTRODUCTION.

In the chapters on agriculture and handicrafts it has been pointed out that the self-sufficing areas of Siam in general produce nearly all the food, clothing, and household goods which they require. Commercialization, whether of agriculture or of handicrafts, leads to extensive and efficient production of one or more specialized commodities and, as a rule, to a decrease in the production of other commodities. A community which specializes in rice cultivation tends to give up the cultivation of other food plants and requires to buy food: a community which specializes in pottery production tends to give up cultivation of all food plants and requires to buy nearly all its food.

We find therefore that the more commercialized districts, such as those of Central Siam, are becoming increasingly dependent on bought food, clothing, and household supplies. This situation is satisfactory so long as rice prices are good and the farmers obtain enough from their agriculture to pay for the supplies which they do not produce. When rice prices fall, however, the farmers of Central Siam are worse off than those of the self-sufficing areas because they lose the income which they have come to require for food and clothing, and they have forgotten how to produce these for themselves.

The Survey of 2473 collected information on these expenditures, so we may compare the costs of 2476 with those of the pre-depression year 2472.

FOOD COSTS.

In all areas of Siam a considerable amount of the farmer's annual expenditure is for food. In most areas he is obliged to buy salt, dried fish, all meat, and a number of other foods; and it is clear

that one of the first enjoyments which he procures for himself when increased incomes make it possible is more variety in his diet.

The divisional data are as follows:

DIVISION	2476		2472 ⁽¹⁾	
	Cash Value	Percent of ⁽²⁾ Total Exp.	Cash Value	Percent of Total Exp.
North-east	8.72	16.53%	29.35	31.81%
South	23.92	28.99%	35.30	26.10%
North	16.10	20.22%	44.29	23.23%
Center	49.80	17.37%	62.73	17.25%

The effect of the low rice prices of the past few years has been to cut down the income of the farmers, and we see that it has caused a tremendous drop in the expenditures for food in the North-east, an almost equally great drop in the North, and very important drops in the South and Center.

In 2476 the average North-eastern household could afford to spend Baht 20.00 less for food than in 2472, that of the North spent Baht 28.00 less, that of the South Baht 11.00 less, and that of the Center Baht 13.00 less. The 2476 figures for the North-east and North are very low indeed.

The percentages of total expenditure remain about the same in the South, North, and Center. In the North-east the percentage has been greatly decreased, and this is evidence that the farmers of North-east Siam have reverted since the depression to a condition of almost perfect self-sufficiency in food. Let us turn to the regional data in the tables at the end of this chapter.

In the North-east we find that food costs have remained fairly high in the Nongkai village which, as we already know, is relatively well-to-do and derives much income from various handicrafts and

(1) See Chapter III of the 2473 Survey's report.

(2) This figure, unlike those which are presented in the regional tables, is the percentage of Total Expenditure. It is less valuable in many ways than the percentage of Annual Expenditure and is presented here only for comparison with the 2472 data.

trade. The average household of this same village spent Baht 42.92 for food in 2472, and it still spent Baht 35.99 in 2476.

The strictly agricultural village near Nagor Rajasima, on the other hand, averaged Baht 35.46 per household for food in 2472 and only Baht 12.99 in 2476. Dependence on the rice crop for income has destroyed the prosperity which this village formerly enjoyed.

Food costs in the other villages have dropped very greatly since 2472, and it is clear that this is due to lowered incomes which make it scarcely possible for the people even to pay taxes and leave no funds available for enjoyments.

In the poorest and most isolated districts households were found which had obtained no food at all by purchase or barter in 2476. They raised their own glutinous rice, caught their own fish, grew a few vegetables, produced a little salt, and went without the other supplies such as fresh meat, imported preserved fish products, tinned milk, and the like. There was no special evidence of dietary deficiency, but it is certain that these households were not very satisfactorily situated.

In the South although much natural food produce is available, we find no households which did not obtain some food by purchase or barter in 2476. The reason for this is probably that exchange and barter are facilitated by relatively good communication and many small markets. It is to be remembered that our data on both incomes and expenditures include the values of goods exchanged as well as the actual cash returns or payments. The relatively high incomes of the South are probably due in larger part to exchange of commodities than to actual cash earnings, and the data on trading which indicate for the most part cash net profits on trade indicate that considerable market activity is carried on in all Southern villages.

It is probable, then, that the relatively high level of expenditures for food in South Siam is evidence rather of wide exchange of food supplies than of high cash expenditures for food. It is evident that exchange of foods is almost as satisfactory from the standpoint of increased dietary variety as is actual purchase of foods, and we may justifiably assert that good facilities for trading have made it possible for the farmers of South Siam to maintain better than the

farmers of other areas their pre-depression standard of food enjoyments.

The impoverished villagers of the North-east cannot exchange their food produce to any great extent because there is practically no communication of any value between different regions. The impoverished villagers of the South, even though they cannot afford to spend cash for food, can still exchange their produce in innumerable small roadside markets.

In the North the average household expenditure for food was much lower in 2476 than in 2472 but, even in the poorest villages, conditions were better than in the isolated districts of the North-east. All Northern households obtained some food by purchase or barter in 2476.

The villages which have the best access to big markets are the ones which spent most for food, and we know that it was the markets which made it possible for them to sell their produce and earn the income which made food expenditures possible.

In the Center most households specialize in growing rice for export. They obtain higher incomes than the farmers of other areas, and they require to buy more food. Nearly a third of their operating and maintenance costs are for food.

The difference between food costs in 2472 and 2476 was much smaller in the case of the Center than in the other areas. The reason for this is that purchased food in a self-sufficing community partakes of the nature of a luxury: in the Center purchased food is a necessity.

The Nontaburi village spent more for food than any other community studied except Ta Mai. The villagers had very high incomes, they put nearly all their energies into pottery making, and they were obliged to buy most of their food. In most districts of rural Siam rice is bought only by households who have lost their usual home produced supply by some unusual circumstances. In the pottery villages it must be bought, and it is the biggest item in the food costs. In this village the lowest expenditure of any family for food was Baht 34.40, and the great majority of the families spent over seventy-five.

The variation in average expenditure for this purpose is less important in the Center than in the other areas. Only three villages averaged less than thirty Baht, and only two averaged more than sixty.

In the South-east we have data from only two villages. Food costs are very high in Amphur Ta Mai for the same reason that they are high in the pottery villages: nearly the entire population is engaged in an activity which leaves little time for rice growing.

The food costs in Klong Naraya are higher than might be expected in view of the fact that the village produces both rice and fruits.

CLOTHING COSTS.

Divisional figures for this type of expenditure, compared with the data for 2472, are as follows:

DIVISION	2476		2472	
	Cash Value	Percent of Total Exp.	Cash Value	Percent of Total Exp.
North-east	3.73	7.07%	7.21	7.81%
South	5.82	7.06%	12.36	9.13%
North	5.46	6.86%	13.34	7.00%
Center	12.65	4.41%	20.29	5.58%

It is apparent that expenditures for clothing were roughly twice as high in 2472 as in 2476. Viewed as percentages of total expenditure clothing costs have not perceptibly changed.

In the North-east a considerable part of the expenditure for clothing is, in fact, expenditure for the raw materials which are to be made into clothing and textiles. Cotton, silk, and dyes are bought by many households in most villages except those where silk production is most general: in them cotton and dyes are bought.

The relatively well-to-do Nongkai village, of course, spent more for clothing than the other communities.

In the Khukan community, as a result of general impoverishment, sixteen of the families studied spent absolutely nothing on

clothing, raw materials, or dyes in 2476. Of the others, only six spent more than one Baht. It is safe to say that the great majority of families in the North-east spent less than two Baht on his account in 2476.

In the South the averages are not much higher although the people do little weaving. There is no season of the year in this part of Siam when the temperature really makes clothing desirable: practically no use is made of "pahoms",—blankets,—and it is these which account for a considerable part of the clothing costs in the North and North-east. Variation from village to village, and even from household to household, is small.

In the North, although weaving is to-day by no means so generally practised as in the North-east, the average cost of clothing is slightly less than in the South in spite of the fact that "pahoms" become almost necessary during a few of the colder weeks of the year. The villages do not differ greatly in this respect, and the figures call for no especial comment.

In the Center clothing costs are higher. Little weaving is done by the villagers, and they have become accustomed to buying such clothing as they require. The regional data show no important variations, and we find that the situation in the two villages studied in South-east Siam is not much different from that in the Center.

HOUSEHOLD COSTS.

In this category are included expenditures for cooking utensils, charcoal, torches, kerosene, soap, matches, mats, and the like. The divisional averages are as follows:

DIVISION	2476		2472	
	Cash Value	Percent of Total Exp.	Cash Value	Percent of Total Exp.
North-east	3.33	6.31%	8.49	9.20%
South	5.84	7.08%	13.72	10.14%
North	4.46	5.60%	15.02	7.88%
Center	10.18	3.55%	25.24	6.94%

Expenditures on this account are of very nearly the same magnitude as the clothing costs, and for very much the same reasons. They have shown about the same drop since 2472 as the clothing costs.

The self-sufficing areas produce their own household supplies as they do their own clothing, and the commercialized districts must buy them. Soap, matches, kerosene, and a few other articles must be bought if they are to be had at all; but the poor regions and those without communication or markets contrive to live quite happily without them.

The data on household costs parallel those for clothing so closely that we need not discuss their regional variations.

SUMMARY AND CONCLUSIONS.

In all parts of Siam about one tenth of the maintenance costs of the farm family is for clothing, and about one tenth is for household supplies of various natures. In all areas except the South three tenths of the annual costs are for food, and in the South the proportion spent for food is four tenths. The higher proportion spent for food in the South is probably due less to proportionate increases in actual cash expenditure than to better facilities for bartering produce in the many roadside markets.

The low rural incomes in the past few years, dependent on low rice prices, have forced the farmers to cut their expenditures for clothing and household supplies in half. They have forced the South and Center to cut food costs by almost a third, and have obliged the Lao areas of North and North-east Siam to revert to a status of almost perfect self-sufficiency in food.

Although the average standard of living has been lowered in the manner indicated, and although many districts of North-east Siam and a few of the North have undergone hardships in the past few years, the Survey found none of the general suffering and misery which have become commonplace in most other countries the world over.

The most serious hardship appears to have been the loss of variety in the diet of the North and North-east. No one starves in

either of these areas, and the medical officers found few evidences of actual dietary deficiency; but it is certain that the Lao were obliged in 2476 to forego many of the foods with which they had begun to supplement their diet of glutinous rice, salt, and chillies. There is reason to believe that the natural fish supply of the North-east is much smaller than it was, but the people in 2476 were still able to buy or catch enough for their absolute requirements. If the fish supply becomes seriously depleted, and if economic conditions do not improve sufficiently so that the people can buy imported marine fish, dangerous dietary deficiencies and corresponding loss of vitality and resistance to disease may be anticipated.

It is desirable that the recommendations of the Department of Fisheries should be carried out as soon as possible in the North-east in order that the natural fish supply may not be depleted.

It is also desirable that highway communication,—urged in many other places in this report,—should be pushed in this area as fast as practicable. The farmers of South Siam avoid the dietary dangers involved by loss of income because they are able to barter and exchange all kinds of food produce in roadside markets. The North-east suffers more from lack of roads than any other area, and it is in the North-east that dietary deficiencies seem most likely to develop.

The same recommendations may be made with regard to the North, but conditions there are much less serious than in the North-east.

There seems to be no reason to fear that food deficiencies will be felt in South Siam, and it seems likely that the farmers of the Center will not fall below an economic level which allows them to buy such food as they require. It is desirable, however, that the rice-farmers of the Center should be encouraged to grow vegetable and fruit crops in sufficient quantity so that they can supply most of their own needs.

No real hardships may be anticipated with regard to lack of clothing or household supplies. The climate makes clothing a necessity only for a few weeks of each year even in the North and the North-east, and it is to be noted that even during that period

babies and children run around without any clothing at all and without, apparently, suffering any serious inconvenience.

The question of dietary deficiencies must be considered and prevented : the question of clothing and household supplies is relatively of little importance.

TABLE XII. A.

Expenditures (Annual) for Food, Clothing, and Household in 2476.

NORTH-EAST SIAM.

REGION	FOOD		CLOTHING		HOUSEHOLD	
	Cash Value	Percent of Annual Exp.	Cash Value	Percent of Annual Exp.	Cash Value	Percent of Annual Exp.
Nongkai	35.99	40.50	11.96	13.46	8.79	9.89
Udorn	6.88	26.81	3.40	13.25	3.54	13.80
Khonkaen	3.11	12.30	3.32	13.12	4.05	16.01
Pu Vieng	2.72	15.67	2.92	16.82	2.08	11.98
Sakolnagor	1.77	11.46	2.60	16.83	2.27	14.69
Ubol	4.08	24.52	1.35	8.11	0.82	4.92
Khukan	2.22	21.37	0.49	4.72	0.62	5.97
Nag. Rajasima	12.99	35.17	3.81	10.31	4.43	11.99
Average North-east	8.72	29.48	3.73	12.61	3.33	11.26

TABLE XII. B.

Expenditures (Annual) for Food, Clothing, and Household in 2476.

SOUTH SIAM.

REGION	FOOD		CLOTHING		HOUSEHOLD	
	Cash Value	Percent of Annual Exp.	Cash Value	Percent of Annual Exp.	Cash Value	Percent of Annual Exp.
Naradhivas	10.34	37.67	3.73	13.59	4.24	15.45
Pattani	35.79	40.53	6.32	7.16	9.24	10.46
Songkla	26.59	47.10	5.64	9.99	5.77	10.22
Trang	21.42	39.53	5.89	10.87	5.45	10.06
Nag. Sridhamaraj	9.92	37.03	3.39	12.65	1.99	7.43
Surat	25.52	44.72	6.60	11.57	4.98	8.73
Jumbor	37.88	37.94	9.15	9.16	9.18	9.19
Average South	23.92	40.83	5.82	9.93	5.84	9.97

TABLE XII. C.

Expenditures (Annual) for Food, Clothing, and Household in 2476.

NORTH SIAM.

REGION	FOOD		CLOTHING		HOUSEHOLD	
	Cash Value	Percent of Annual Exp.	Cash Value	Percent of Annual Exp.	Cash Value	Percent of Annual Exp.
Chang Puak (Chiengmai)	13.96	40.83	2.29	6.70	2.65	7.75
Mae Hiah (Chiengmai)	13.08	35.26	2.93	7.90	1.68	4.53
San Mahapon (Chiengmai)	30.58	26.82	11.59	10.17	11.61	10.18
Lampun	31.24	33.24	6.15	7.53	6.10	7.47
Na Kuam (Lampang)	26.51	37.09	11.83	16.55	7.27	10.17
Ban Sadej (Lampang)	6.61	30.38	1.85	8.50	1.71	7.86
Chiengrai	9.54	26.19	7.19	19.74	2.83	7.77
Chiengsen	4.91	18.91	2.94	11.33	2.32	8.94
Pa Daeng (Prae)	8.20	28.31	3.34	11.74	2.89	10.15
Mae Kami (Prae)	9.47	30.27	2.57	8.22	2.51	8.02
Laplae	23.00	25.88	7.37	8.29	7.47	8.41
Average North	16.10	31.00	5.46	10.51	4.46	8.59

TABLE XII. D.

Expenditures (Annual) for Food, Clothing, and Household in 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	FOOD		CLOTHING		HOUSEHOLD	
	Cash Value	Percent of Annual Exp.	Cash Value	Percent of Annual Exp.	Cash Value	Percent of Annual Exp.
Bangkok	64.72	40.24	9.98	6.21	10.15	6.31
Nontaburi	145.32	32.72	25.23	5.68	23.55	5.30
Chazerngsao	52.52	26.94	12.67	6.50	9.42	4.83
Dhanyaburi	50.44	20.54	14.99	6.10	15.15	6.17
Ayuthia	58.77	24.60	16.99	7.11	12.41	5.20
Lopburi	40.50	28.78	9.78	6.95	7.47	5.31
Saraburi	33.45	31.37	8.81	8.26	6.36	5.96
Supanburi	30.40	20.85	16.79	11.51	8.17	5.60
Uthai Dhani	26.20	28.42	8.82	9.57	6.72	7.29
Pitsanulok	17.09	29.46	8.28	13.79	7.00	11.66
Bejraburi	28.47	23.26	6.80	5.56	5.57	4.55
Average Central	49.80	28.06	12.65	7.18	10.18	5.74
	CHANTABUN					
Ta Mai	148.77	27.62	25.22	4.68	18.39	3.41
Klong Naraya	39.94	41.94	8.12	8.53	7.33	7.70

CHAPTER XL

BUSINESS AND "ALL OTHER" ANNUAL EXPENDITURES.

INTRODUCTION.

We have in this chapter to deal with all the expenditures of an operating or maintenance nature which have not so far been discussed. Some of these can be considered as "Business" costs because of their dependence on some form of commercial enterprise: they are, primarily, wages paid for assistance in shopkeeping and payments for various other services in connection with trading. The "All Other" annual costs include ordinary civil expenses such as the Head Tax, costs of transportation when this cannot be considered as a farming or business cost, costs of education, miscellaneous spending money for members of the household, and expenditures for betel nut, tobacco, drugs of a non-medical nature, and alcoholic drink.

It is evident that some of these "All Other" costs are not strictly of an operating or maintenance nature. The Siamese farmer is not obliged to make use of tobacco or betel nut when he does not produce them for himself, and he is not obliged to provide his family with spending money for sweets, cakes, and minor enjoyments. We cannot, however, satisfactorily appraise maintenance costs without making some allowance for enjoyments, and it has seemed most reasonable to make the classification in Siam along the lines indicated.

BUSINESS COSTS.

We need spend very little time on these: they were found in only seven of the villages studied, and were of importance only in one. Divisional, and even regional averages are of little significance in view of the limited data.

In the Nontaburi community business costs have the high average of Baht 42.29, and are in connection with the pottery industry.

" ALL OTHER " COSTS.

Divisional averages for these expenditures are as follows:

DIVISION	" All Other " Annual Expenditures	Percentage of all Annual Expenditures
North-east	8.18	27.65%
South	15.59	26.61%
North	14.79	28.48%
Center	29.82	16.80%

In the three self-sufficing areas these miscellaneous expenditures account for over one quarter of the annual costs of maintenance and upkeep: in the Center they are somewhat less than one fifth. In spite of this they are in the Center twice as high as in the North and South, and over three times as high as in the North-east.

The regional averages are presented in the Tables at the end of Chapter XII.

In the North-east we find that Nongkai community spends twice as much for these miscellaneous items as any other village and we know that this is due largely to the relative wealth of the village and its proximity to a market center where many enjoyments are available. It can afford to spend money for a variety of services and articles which are beyond the means of the other communities.

In the impoverished village of Changvad Khukan the average expenditure per household is less than the legal Head Tax even if we assume that there is only one adult male per household. Many of these families are quite unable to pay their taxes, and few can afford to spend even small amounts on betel nut and tobacco.

Much the same situation is evident in the other communities of the North-east. There were no funds available for luxuries in any form the household considered itself lucky if it was able to pay its Head Taxes.⁽¹⁾

(1) Head Tax demands were in most North-eastern communities Baht 4.00 per adult male. When the farmer worked for the government instead of paying his tax he was credited in the schedules with an income from labor of Baht 4.00 and with having paid a Head Tax of Baht 4.00.

In the South these expenditures vary widely from household to household. Those who can afford it spend a great deal every year on automobile transport, cinemas, trips to festivals, and the like. The average family of the South pays its taxes, spend a certain amount on tobacco and betel nut, and goes rarely to the cinema. The fluctuation in the regional averages is caused by the presence in some village samples of one or two families who spent large amounts in these ways

In the North the situation is much the same except that even more is spent, in a few villages, for motor transport. Many villagers make rather frequent trips by motor bus to the provincial centers in order to have a day of recreation and to buy supplies at cheaper prices than are asked in their own local markets.

The expenditures under this category in the Lampun community give a high average because of one or two women who earn considerable amounts in the textile industry and spend large sums on education for their children.

In the Center expenditures under this heading are high and are almost wholly for entertainments and diversions. Incomes are higher, so more can be spent on betel nut, alcoholic drink, and the like. Those districts which do not produce much betel nut or sera leaf pay a great deal every year for these commodities, and all spend heavily for tobacco. Alcoholic drink is not purchased to any significant extent by the average farmer but in most communities there are one or two individuals who spend large amounts for beer and distilled liquors.

Transport costs in the Center are low because the people do not travel much for pleasure and most villages are far from the railway and from motor highways. The people like to make trips to shrines and festivals, however, and individually sometimes spend rather large amounts for this purpose. Most families can afford such excursions only once in a number of years.

Expenditures for education are uniformly very low.

SUMMARY AND CONCLUSIONS.

It is likely that expenditures for miscellaneous enjoyments

have been greatly cut in the past few years. Some of the villages in the North-east could not even pay their head taxes in 2476, and their expenditures for education, transport, and diversions were practically nil.

The high expenditures for betel nut, sera leaf, and tobacco in the Central provinces indicate that there is a great market for these Siamese-produced commodities. The extension of communication will make it possible for the regions which specialize in these products to expand their production to a very great degree.

Expenditures for cinema entertainments and the like have a greater value to the nation than might be supposed, because it is found that the country people will spend for such diversions when they have the opportunity. This fact is important, because it is only when people want money for such purposes that they begin to work for it.

The greatest difficulty which the nation faces, in connection with economic development, is that of making the rural population more interested in money as such. Patriots sometimes suggest that this may be done by education and by giving the people lectures on the desirability of thrifty habits. Unfortunately, there is no reason to suppose that this method would have any success; and there is good reason to believe that it would fail dismally. Such methods have been tried out by philanthropic institutions in other countries, and they have always been failures. One philanthropist has said that the only people who listen to such lectures and learn anything from them are the people who already have thrifty habits and don't need the lectures: the indolent and unprogressive members of the population can scarcely be induced to attend the lectures and learn nothing when they do.

Thrift, and an appreciation of the value of money, cannot be taught: they can only develop when a people begins to desire money in order to procure for itself commodities and services which it cannot produce for itself. The Chinese love money because they require it in China to buy many things which they desire. Rural Siamese will not make serious efforts to increase their incomes until they desire to attend cinemas once or twice a month, and to buy

various small luxuries such as cigarettes, perfumes, hair tonics, and the like: the actual bodily needs of the Siamese are supplied by nature.

Human nature is much the same in all continents, and people are ready to strive energetically to obtain more money only when they hope to obtain for themselves greater pleasures. The rural Siamese will work harder and more regularly only when, with expanding communication and increased commercialization, more luxuries are offered them for sale.

CHAPTER XII.

ANNUAL INCOMES AND EXPENDITURES: OPERATING PROFITS.

INTRODUCTION.

In the present chapter it is our task to coordinate the information which has already been discussed in such a way as to discover which villages on the whole profitted by their occupations in 2476 and which, on the whole, were unable to cover their maintenance and upkeep charges by the income from their occupations. All categories of annual income and expenditure have already been analyzed with the exception of interest paid on debts and interest received on loans. These figures are discussed in detail in the chapter on Agricultural Credit: we must include them here in our totals for annual income and expenditure.

TOTAL ANNUAL INCOME.

In the detailed tables at the end of this chapter it is seen that the most important sources of income are crops, handicrafts, trade and labor. The divisional figures for total annual income and for these four most important sources are:

DIVISION	Crops	Crafts	Trade	Labor	Total Annual Income
North-east	7.74	9.80	1.71	1.57	30.16
South	17.76	19.91	18.10	5.93	73.89
North	18.99	20.15	12.52	5.52	65.20
Center	105.47	84.09	11.97	8.42	184.56

In the South and North the earnings of the average household in 2476 were over twice as high as in the North-east; in the Center they were over twice as high as in the South or North.

Roughly the same proportions hold in the case of income from handicrafts and of income from labor, except that the Center does not hold so great a preeminence in these occupations as it does in total annual income. In agriculture, however, the Center is found to be five times as productive per household as the North or South. Trade is of far greater importance to the rural household of the South than it is to the farm families of other areas.

Agriculture is the chief source of income in Central Siam: it accounts for nearly 60% of the yearly earnings. In the other areas handicrafts are as important as agriculture and in the South trade is equally important. Labor is everywhere relatively unimportant.

Examination of the regional data at the end of this chapter reveals the fact that the earning capacity of the villages studied ranges all the way from Baht 7.60 household in the Khukan community to Baht 543.00 per household in Amphur Ta Mai. The farm families of some districts earn nearly one hundred times as much as the farm families of other districts. This is an extremely wide range, and it is important that we should attempt to discover the reasons for it.

The two villages with the highest earnings are those of Nontaburi and Ta Mai. Each of these communities earns nearly twice as much as its next nearest competitor, and the reasons for it are clear. Both are extremely highly specialized: one puts all its energy into pottery production and supplies cooking utensils to a large part of rural Siam, and the other concentrates equally on pepper cultivation and is responsible for the greater part of the Siamese pepper exports. These conditions cannot readily be duplicated in other areas as they are the result of special aptitudes and special opportunities. If we omit these two villages from consideration we find that the range of household incomes is still from Baht 7.60 to Baht 264.96.

In each of the three areas of uncommercialized agriculture we find that one or two villages are significantly richer in yearly earnings than most of the others. What are the reasons for this? Let us take these most important villages and see how important they are relative to each of the others in the same areas in each of the

most important sources of income. In the tables at the end of the chapter we see that in the North-east the Nongkai village stands first in total annual income, in handicrafts, and in trade. It stands third in agriculture, because two other villages have higher incomes from crops; and it is eighth in labor because all the other villages earned more in this way. Let us see:

VILLAGE	Total Annual Income	Trade	Crops	Crafts	Labor
NORTH-EAST					
Nongkai	1	1	3	1	8
SOUTH					
Pattani	1	1	4	3	7
Jumbor	2	2	6	1	5
NORTH					
San Mahapon	1	1	4	7	3
Na Kuam	2	2	2	2	1

From these figures we derive the important conclusion:

The development of trade in any village of the three self-sufficing areas is a better indication of general economic welfare than the development of any other occupation.

In other words, the factors which make for increased trading in these areas are the factors which make for improved economic conditions in general. It has been pointed out in a preceding chapter that trading developments give all rural Siamese an opportunity to sell their produce, whatever it may be, and lead to greater incomes from whatever the local sources may be. The figures which have just been presented give the clearest possible proof of this statement. It does not matter whether a community is primarily given to agriculture, to handicrafts, or to any other occupation; but it must have trade opportunities if it is to benefit by its occupations.

In Central Siam the variation in economic development is less extreme from village to village than it is in the other areas: the figures of relative importance are therefore less valuable. They show us:

VILLAGE	Total Annual Income	Trade	Crops	Crafts	Labor
Nontaburi	1	2	3	1	11
Dhanyaburi	2	3	2	10	3
Ayuthia	3	5	1	7	8
Lopburi	4	1	4	8	6

It is obvious that general economic welfare in Central Siam is not correlated with handicrafts and labor, and it is evident that it is less definitely associated with trade than it is in the other areas. The great concentration of effort in rice agriculture has made income from crops as good an indication of general economic welfare in Central Siam as trade. Since a correlation with trade is still apparent we need not modify the statements which were made on the preceding page.

TOTAL ANNUAL EXPENDITURES.

The important classes of annual expenditure have already been discussed in detail in previous chapters. Here it is only necessary to point out that operating and maintenance costs bear a fairly close relationship to yearly earnings, and that the higher expenditures of the richer districts are only in part necessitated by increased operations costs involved by more intensive production. This point is brought out by the following divisional figures:

DIVISION	Farm Costs	Food Costs	Clothing Costs	Household Costs	Land Rent Paid	Int. Paid on Debts	All Other Costs	Total Annual Expend.
North-east	3.33	8.72	3.73	3.33	0.23	0.25	8.18	29.58
South	4.41	23.92	5.82	5.84	1.28	0.70	15.59	58.59
North	7.27	16.10	5.46	4.46	2.06	0.73	14.79	51.93
Central	33.76	49.80	12.65	10.18	19.56	12.80	29.82	177.46

The total annual expenditures of the different areas are approximately the same in magnitude as the total yearly earnings. The same is found to be true in most of the individual communities studied.

The costs of intensive rice cultivation in Central Siam result in important expenditures for land rentals and interest on debts. Concentration of effort on a single crop leads to greater expenditures for commodities which are not produced by the families of this area, but it seems certain that the higher expenditures of many rich districts in such fields as "All Others", "Food", "Clothing", and "Household" are not strictly necessary. Standard of living and use of purchased commodities both increase with higher earnings in Siam as in all other countries. The regional data bring this out more clearly.

In the Nongkai, Pattani, Jumbor, San Mahapon, and Na Kuam communities expenditures for food and "All Others" (which includes miscellaneous costs of entertainment, travel, and small luxuries) increase out of all proportion to income. The same thing is found in the richer villages of Central Siam.

Before considering these costs further we will do well to compare earnings with expenditures directly.

PROFIT AND LOSS ON ANNUAL TRANSACTIONS.

Divisional averages are :

DIVISION	Total Annual Income	Total Annual Expenditure	2476 Operating Profit
North-east	30.16	29.58	0.58
South	73.89	58.59	15.30
North	65.20	51.93	13.27
Center	184.56	177.46	7.10

The margin of profit in 2476 was very low North-east and Central Siam, and the regional data in Tables XVII show that many villages of each of these two areas failed to earn enough in 2476 to cover their expenditures.

In the North-east the only village to show a significant profit was that near Nongkai. The average household earned Baht 23.56 more in 2476 than it spent on operations and maintenance. In the following chapter we will see that it invested even more than this during the year: for the moment we need point out only that its high expenditures for food, clothing, and "All Others",—although unnecessary,—were justified by its earnings.

With the exception of the village near Nagor Rajasima all the other North-eastern communities made losses in 2476. Their expenditures were kept to a bare minimum but, even so, many families could not pay their taxes and cover their upkeep from the year's earnings.

In the South the village near Pattani was in much the same situation as that near Nongkai. Large profits justified unnecessary expenditures on a considerable scale. The Jumbor village had high earnings but it cut down its profits by spending even more than the Pattani village on food, clothing, and "All Others". The Surat village made a higher average profit than might be expected from the extent of its earnings because it kept its miscellaneous expenditures down.

In the North San Mahapon and Na Kuam earned big profits and spent considerable amounts for food, clothing, household, and "All Others". The Lampun village, in spite of a considerable income, made only a relatively small profit because of its high expenditures for food and "All Others".

In the Center one village, that near Chaxerngsao, sustained the very high average loss per household of Baht 70.07, and it is clear that this was not due to unreasonable expenditures. It seems that crop failures must have been the cause of this loss, because the village spent a large amount on farming costs and realized much less than a number of other communities which had lower farm costs.

It is worth noting that the village with the highest profits for the year, that near Lopburi, was the village with the highest development of trading activities, and that a closer correlation is to be observed between profits and trade than was found between total earnings and trade.

SUMMARY AND CONCLUSIONS.

All areas of Siam except the North-east earned, on the average, more than they spent for operations and maintenance during 2476. It seems likely that there have been years since 2472 when this was not the case, and we are justified in believing that there exists in rural Siam a tendency to cut costs to meet the diminished incomes resulting from low rice prices. In North-east Siam this tendency has not availed: expenditures have been cut to a bare minimum but the greater part of the population is still unable to pay taxes and cover necessary expenses from its earnings. Circumstances which were probably exceptional in 2476 brought about significant losses in a few districts of Central Siam but, in general, conditions show definite signs of improvement in all parts of rural Siam except the North-east. It is plain that North-east Siam stands in greater need of governmental assistance and economic development than any other area of the Kingdom.

Investigation of average earnings and profits in the different villages studied by the Survey has revealed and proven the fact that trade is absolutely essential to improved economic conditions. It is the villages where the most trading is done which earned the most and showed the highest profits in 2476 even though actual trading profits were not in themselves significant sources of income in all the richer villages. Trade is absolutely essential to economic development: without trade the farmer, fisherman, and craftsman cannot sell their produce and must remain poor no matter how hard they work and no matter how much they produce. Trade must be stimulated in rural Siam, and in no area is this so important as in the North-east where economic conditions are really bad and may lead to serious difficulties.

Trade, and the development of trade, have been discussed in Chapter VIII. Expansion of the motor highways of rural Siam is the most important need of the nation if rural economic conditions are to be improved.

TABLE XIII. A.

Annual Income Received during 2476.

NORTH-EAST SIAM.

REGION	Int. on Loans	Land Rent Rec'd	Bldg. Rent Rec'd	Income from Crops	Animal Sales and Hire	Fish Sales	All Crafts
Nongkai	4.50	1.36	4.73	8.63	0.22	9.48	48.23
Udorn .. ..	..	0.02	..	5.96	0.59	4.12	4.51
Khonkaen .. ..	..	..	..	12.99	0.04	5.25	4.39
Pu Vieng	0.28	0.03	..	4.66	0.68	0.07	4.46
Sakolnagor ...	..	..	..	1.32	1.41	3.80	2.99
Ubol	0.03	..	..	3.88	0.61	1.90	5.16
Khukan .. ..	..	..	..	1.25	0.27	0.07	1.90
Nag. Rajasima ..	1.75	0.44	..	23.19	0.05	0.01	6.79
Average North-east ..	0.82	0.23	0.59	7.74	0.48	3.09	9.80

TABLE XIII. A.—(contd.).

Annual Income Received during 2476.

NORTH-EAST SIAM.

REGION	Labor	Trade	Prof.	Gov.	All Others	Total Annual Income
Nongkai .. .. .	..	8.54	26.31	..	0.38	112.34
Udorn	1.03	0.23	..	2.23	..	18.69
Khonkaen	1.26	0.15	..	..	..	24.08
Pu Vieng	0.14	0.18	1.50	0.23	..	12.23
Sakonagor	0.92	1.99	..	1.65	..	14.08
Ubol	0.94	0.49	..	0.63	..	13.64
Khukan	3.67	0.44	..	..	..	7.60
Nag. Rajasima	4.58	1.69	..	0.08	..	38.58
Average North-east	1.57	1.71	3.48	0.60	0.05	30.16

TABLE XIII. B.

Annual Income Received during 2476.

SOUTH SIAM.

REGION	Int. on Loans	Land Rent Rec'd	Bldg. Rent Rec'd	Income from Crops	Animal Sales and Hire	Fish Sales	All Crafts
Naradhiwas ..	0.15	1.84	..	10.27	1.12	0.03	8.30
Pattani	0.38	4.76	16.80	20.83	0.77	0.54	19.91
Songkla .. ..	..	0.33	..	26.75	1.54	0.27	6.38
Trang .. ..	..	0.55	..	21.23	2.06	..	14.65
Nag. Sridhamaraj	..	0.30	..	6.12	0.37	..	18.05
Surat .. ..	..	..	3.00	32.60	1.70	0.01	32.15
Jumbor .. ..	..	0.73	21.00	6.48	2.57	15.41	39.96
Average South	0.08	1.22	5.83	17.76	1.45	2.32	19.91

TABLE XIII. B.—(contd.).

Annual Income Received during 2476.

SOUTH SIAM.

REGION	Labor	Trade	Prof.	Gov.	All Others	Total Annual Income
Naradhiva	3.90	0.84	..	0.66	..	27.11
Pattani	0.99	85.73	0.52	1.50	..	152.73
Songkla	17.91	4.39	0.41	0.11	..	58.09
Trang	9.71	1.73	3.00	1.70	..	54.63
Nag. Sridhamaraj ..	4.27	3.98	..	0.34	0.21	33.64
Surat	2.83	2.21	0.50	0.05	..	74.56
Jumbor	2.41	27.81	..	..	..	116.37
Average South	5.93	18.10	0.63	0.63	0.03	73.89

TABLE XIII. C.

Annual Income Received during 2476.

NORTH SIAM.

REGION	Int. on Loans	Land Rent Rec'd	Bldg. Rent Rec'd	Income from Crops	Animal Sales and Hire	Fish Sales	All Crafts
Chang Puak (Chiengmai) ..	0.20	0.20	..	3.90	0.19	..	23.03
Mae Hiah (Chiengmai) ..	1.30	3.25	..	11.36	0.10	..	21.64
San Mahapon (Chiengmai) ..	3.81	7.40	2.52	20.71	0.20	0.99	13.35
Lampun .. ..	..	3.04	..	8.29	0.05	0.13	52.04
Na Kuam (Lampang) ..	0.32	2.31	..	32.01	1.74	0.18	47.12
Ban Sadej (Lampang) ..	..	0.49	0.50	3.92	0.97	0.07	10.82
Chiengrai ..	0.55	3.87	..	10.15	0.96	0.62	15.52
Chiengsen ..	0.04	3.29	..	20.49	0.21	0.07	6.76
Pa Daeng (Prae) ..	..	0.06	..	25.20	0.01	0.01	7.22
Mae Kami (Prae) ..	..	..	..	17.84	0.16	0.04	4.59
Laplae	3.25	3.88	1.86	55.01	1.69	0.08	19.81
Average North	0.86	2.53	0.44	18.99	0.57	0.20	20.15

TABLE XIII, C.—(contd.).

Annual Income Received during 2476.

NORTH SIAM.

REGION	Labor	Trade	Prof.	Gov.	All Others	Total Annual Income
Chang Puaak (Chiengmai)	5.52	0.40	..	..	..	33.44
Mae Hiah (Chiengmai)	5.73	4.15	..	..	..	47.53
San Mahapon (Chiengmai)	8.60	94.00	..	9.00	..	160.58
Lampun	8.15	4.24	10.00	5.25	..	91.19
Na Kuam (Lampang)	13.51	8.75	..	7.20	..	113.14
Ban Sadej (Lampang)	4.92	4.75	..	..	..	26.24
Chiengrai	3.84	6.10	..	4.90	..	45.51
Chiengsen	1.61	1.12	..	..	..	33.59
Pa Daeng (Prac)	1.82	0.05	..	..	..	34.37
Mae Kami (Prac)	7.54	7.05	..	..	..	37.22
Laplae	0.54	7.12	1.25	..	..	94.49
Average North	5.52	12.52	1.02	2.40	..	65.20

TABLE XIII. D.

Annual Income Received during 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Int. on Loans	Land Rent Rec'd	Bldg. Rent Rec'd	Income from Crops	Animal Sales and Hire	Fish Sales	All Crafts
Bangkok	4.23	5.85	7.87	68.49	0.57	6.12	19.36
Nontaburi	7.73	12.57	19.02	162.46	..	..	221.93
Chaxerngsao	3.00	7.03	..	84.53	0.29	1.25	15.69
Dhanyaburi	17.38	15.65	..	170.71	13.05	5.87	7.82
Ayuthia	5.08	20.12	..	202.67	0.09	1.62	13.08
Lopburi	2.35	15.15	..	117.66	0.59	2.85	11.52
Saraburi	7.32	5.54	..	68.92	0.90	0.22	28.78
Supanburi	5.62	11.53	..	100.92	0.33	0.19	10.08
Uthai Dhani	1.48	1.17	..	57.96	0.56	7.28	26.00
Pitsanulok .. ..	..	8.90	..	41.99	1.17	2.55	7.07
Bejraburi .. ..	..	0.40	..	83.82	2.76	0.10	13.67
Average Central	4.93	8.99	2.44	105.47	1.85	2.55	34.09
CHANTABUN							
Ta Mai	9.78	8.90	17.82	479.04	0.07	..	20.44
Klong Naraya	0.43	3.58	..	72.76	1.64	0.97	21.72

TABLE XIII. D.—(contd.).

Annual Income Received during 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Labor	Trade	Prof.	Gov.	All Others	Total Annual Income
Bangkok	18.86	9.07	4.81	9.92	..	154.65
Nontaburi	0.90	32.98	..	15.28	..	472.87
Chazerngsao	11.17	1.61	..	0.30	..	124.87
Dhanyaburi	16.58	17.75	..	0.15	..	264.96
Ayuthia	4.91	9.53	..	..	..	257.10
Lopburi	5.01	36.49	..	0.54	..	192.16
Saraburi	1.83	11.87	..	0.10	..	125.48
Supanburi	4.95	1.90	..	0.44	..	135.96
Uthai Dhani	7.88	8.77	..	..	..	111.10
Pitsanulok	1.40	1.12	9.00	1.69	..	69.89
Bejraburi	19.70	0.56	..	..	..	121.01
Average Central	8.42	11.97	1.26	2.59	..	184.56
	CHANTABUN					
Ta Mai	3.20	3.00	..	0.75	..	543.00
Klong Naraya	10.94	..	..	0.16	..	112.20

TABLE XIV. A.

Percentage Distribution of Annual Income during 2476.

NORTH-EAST SIAM.

REGION	Int. on Loans	Land Rent Rec'd	Bldg. Rent Rec'd	Crop Sales	Animal Sales and Hire	Fish Sales	All Crafts
Nongkai	4.00	1.21	4.20	7.73	0.19	8.43	42.90
Udorn .. ..	..	0.11	..	31.93	3.13	22.04	24.13
Khonkaen .. ..	..	..	..	53.97	0.16	21.79	18.23
Pu Vieng	2.25	0.27	..	38.13	5.54	0.53	36.57
Sakolnagor .. ..	..	..	..	9.41	9.98	27.01	21.22
Ubol	0.18	..	..	28.41	4.47	13.92	37.89
Khukan .. ..	..	..	..	16.42	3.51	0.96	25.01
Nag. Rajasima	4.54	1.13	..	60.14	0.13	0.01	17.60
Average North-east	2.72	0.78	1.96	25.67	1.60	10.23	32.51

TABLE XIV. A.—(contd.).

Percentage Distribution of Annual Income during 2476.

NORTH-EAST SIAM.

REGION	Labor	Trade	Prof.	Gov.	All Others	Total Annual Income
Nongkai .. .. .	..	7.59	23.41	..	0.33	100%
Udon	5.54	1.20	..	11.91	..	100%
Khonkaen	5.22	0.62	..	..	..	100%
Pu Vieng	1.13	1.43	12.30	1.64	..	100%
Sakolnagor	6.53	14.12	..	11.72	..	100%
Ubol	6.88	3.58	..	4.59	..	100%
Khukan	48.33	5.76	..	..	..	100%
Nag. Rajasima.	11.88	4.37	..	0.19	..	100%
Average North-east	5.20	5.67	11.53	1.99	0.16	100%

TABLE XIV. B.

Percentage Distribution of Annual Income during 2476.

SOUTH SIAM.

REGION	Int. on Loans	Land Rent Rec'd	Bldg. Rent Rec'd	Crop Sales	Animal Sales and Hire	Fish Sales	All Crafts
Naradhiwas ..	0.55	6.78	..	37.89	4.14	0.09	30.60
Pattani	0.24	3.12	10.99	13.64	0.50	0.35	13.03
Songkla .. ..	..	0.56	..	46.05	2.65	0.47	10.98
Trang .. ..	..	1.00	..	38.86	3.77	..	26.81
Nag. Sridhamaraj	..	0.89	..	18.20	1.11	..	53.65
Surat .. ..	..	..	4.02	43.71	2.28	0.02	43.11
Jumbor .. ..	..	0.63	18.04	5.57	2.21	13.24	34.34
Average South	0.10	1.64	7.89	24.03	1.96	3.14	26.95

TABLE XIV. B.—(contd.).

Percentage Distribution of Annual Income during 2476.

SOUTH SIAM.

REGION	Labor	Trade	Prof.	Gov.	All Others	Total Annual Income
Naradhivas	14.38	3.12	..	2.44	..	100%
Pattani	0.66	56.14	0.34	0.98	..	100%
Songkla	30.83	7.56	0.70	0.20	..	100%
Trang	17.78	3.17	5.49	3.11	..	100%
Nag. Bridhamaraj ..	12.68	11.82	..	1.00	0.64	100%
Surat	3.14	2.96	0.67	0.08	..	100%
Jumbor	2.07	23.90	..	..	..	100%
Average South	8.03	24.50	0.86	0.85	0.04	100%

TABLE XIV. C.

Percentage Distribution of Annual Income during 2476.

NORTH SIAM.

REGION	Int. on Loans	Land Rent Rec'd	Bldg. Rent Rec'd	Crop Sales	Animal Sales and Hire	Fish Sales	All Crafts
Chang Puak (Chiangmai) ..	1.58	0.59	..	11.55	0.56	..	68.19
Mae Hiah (Chiangmai) ..	2.73	6.83	..	23.91	0.21	..	45.53
San Mahapon (Chiangmai) ..	2.37	4.63	1.57	12.89	0.13	0.62	8.31
Lampun .. ..	..	3.31	..	9.06	0.05	0.14	56.83
Na Kuam (Lampang) ..	0.28	2.04	..	28.30	1.53	0.15	41.65
Ban Sadej (Lampang) ..	..	1.89	1.91	14.95	3.69	0.24	40.46
Chiengrai ..	1.21	8.51	..	22.29	2.12	1.37	34.09
Chiengsen ..	0.10	9.80	..	60.99	0.61	0.21	20.12
Pa Daeng (Prae) .. ..	..	0.18	..	73.32	0.04	0.03	21.00
Mae Kami (Prae) .. ..	..	..	..	47.93	0.43	0.10	12.33
Laplae	3.44	4.11	1.97	58.21	1.79	0.08	20.96
Average North	1.36	3.88	0.68	29.11	0.87	0.30	30.89

TABLE XIV. C.—(contd.).

Percentage Distribution of Annual Income during 2476.

NORTH SIAM.

REGION	Labor	Trade	Prof.	Gov.	All Others	Total Annual Income
Chang Puak (Chiengmai)	16.34	1.18	..	..	..	100%
Mae Hiah (Chiengmai)	12.05	8.73	..	..	..	100%
San Mahapon (Chiengmai)	5.35	58.53	..	5.60	..	100%
Lampun	8.91	4.63	10.92	5.73	..	100%
Na Kuam (Lampang)	11.94	7.73	..	6.36	..	100%
Ban Sadej (Lampang)	18.77	18.10	..	..	..	100%
Chiengrai	6.23	13.41	..	10.76	..	100%
Chiengsen	4.80	3.35	..	..	..	100%
Pa Daeng (Prae)	5.26	0.14	..	..	..	100%
Mae Kami (Prae)	20.26	18.94	..	..	..	100%
Laplae	0.57	7.54	1.32	..	..	100%
Average North	8.47	19.18	1.57	8.67	..	100%

TABLE XIV. D.

Percentage Distribution of Annual Income during 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Int. on Loans	Land Rent Rec'd	Bldg. Rent Rec'd	Crop Sales	Animal Sales and Hire	Fish Sales	All Crafts
Bangkok	2.73	3.77	5.07	44.13	0.37	3.95	12.48
Nontaburi	1.63	2.66	4.02	34.36	..	..	46.93
Chaxerngsao	2.40	5.63	..	67.69	0.24	1.00	12.56
Dhanyaburi	6.55	5.90	..	64.30	4.92	2.21	2.94
Ayuthia	1.97	7.82	..	78.77	0.03	0.63	5.08
Lopburi	1.22	7.88	..	61.23	0.31	1.48	5.99
Saraburi	5.84	4.41	..	54.92	0.71	0.18	22.94
Supanburi	4.14	8.48	..	74.22	0.24	0.14	7.41
Uthai Dhani	1.33	1.06	..	52.17	0.50	6.55	23.40
Pitsanulok .. ..	..	5.58	..	60.09	1.67	3.65	10.11
Bejraburi .. ..	..	0.33	..	69.27	2.28	0.08	11.29
Average Center	2.67	4.87	1.32	57.15	1.00	1.38	18.47
CHANTABUN							
Ta Mai	1.80	1.64	3.29	88.21	0.01	..	3.77
Klong Naraya	0.38	3.19	..	64.78	1.46	0.86	19.34

TABLE XIV. D.—(contd.).

Percentage Distribution of Annual Income during 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Labor	Trade	Prof.	Gov.	All Others	Total Annual Income
Bangkok	11.83	5.84	3.09	6.39	..	100%
Nontaburi	0.19	6.98	..	3.23	..	100%
Chaxerngsao	8.95	1.29	..	0.24	..	100%
Dhanyaburi	6.25	6.69	..	0.05	..	100%
Ayuthia	1.90	3.70	..	..	..	100%
Lopburi	2.60	18.99	..	0.28	..	100%
Saraburi	1.46	9.46	..	0.07	..	100%
Supanburi	3.64	1.40	..	0.32	..	100%
Uthai Dhani	7.09	7.89	..	..	..	100%
Bitsanulok	2.00	1.61	12.88	2.41	..	100%
Bejraburi	16.28	0.46	..	..	..	100%
Average Center	4.57	6.49	0.68	1.40	..	100%
	CHANTABUN					
Ta Mai	0.58	0.55	..	0.13	..	100%
Klong Naraya	9.74	..	..	0.14	..	100%

TABLE XV. A.

Annual Expenditures during 2476.

NORTH-EAST SIAM.

REGION	Farm Costs	Animal Costs	Fishing Costs	Food Costs	Clothing Costs	House- hold Costs
Nongkai	2.08	0.28	2.96	35.99	11.96	8.79
Udorn	0.84	0.27	0.88	6.88	3.40	3.54
Khonkaen	4.90	0.20	1.65	3.11	3.32	4.05
Pu Vieng	3.51	0.03	0.88	2.72	2.92	2.08
Sakolnagor	1.80	0.11	1.04	1.77	2.60	2.27
Ubol	4.93	0.08	0.22	4.08	1.35	0.82
Khukan	2.84	0.08	0.28	2.22	0.49	0.62
Nag. Rajasima	5.76	0.04	0.14	12.99	3.81	4.43
Average North-east	3.33	0.14	1.01	8.72	3.73	3.33

TABLE XV. A.—(contd.).

Annual Expenditures during 2476.

NORTH-EAST SIAM.

REGION	Land Rent Paid	Bldg. Rent Paid	Int. Paid on Debts	Business Costs	All Other Costs	Total Annual Expend.
Nongkai	0.94	..	..	5.27	20.60	88.87
Udorn	0.25	..	..	..	9.60	25.66
Khonkaen .. .. .	..	..	..	..	8.06	25.29
Pu Vieng .. .. .	..	..	..	..	5.22	17.36
Sakolnagor	0.18	..	..	..	5.68	15.45
Ubol	0.10	..	0.02	..	5.04	16.64
Khukan	0.11	..	0.04	..	3.71	10.39
Nag. Rajasima	0.29	..	1.93	..	7.55	36.94
Average North-east	0.23	..	0.25	0.66	8.18	29.58

TABLE XV. B.

Annual Expenditures during 2476.

SOUTH SIAM.

REGION	Farm Costs	Animal Costs	Fishing Costs	Food Costs	Clothing Costs	House- hold Costs
Naradhiwas	1.86	..	0.04	10.34	3.73	4.24
Pattani	2.70	0.04	0.02	35.79	6.32	9.24
Songkla	5.53	0.08	0.05	26.59	5.64	5.77
Trang	5.57	0.05	0.09	21.42	5.89	5.45
Nag. Sridhamaraj	4.41	0.10	0.03	9.92	3.39	1.99
Surat	6.50	0.45	0.09	25.52	6.60	4.98
Jumbor	4.26	0.20	2.14	37.88	9.15	9.18
Average South	4.41	0.13	0.35	23.92	5.82	5.84

TABLE XV. B.—(contd.).

Annual Expenditures during 2476.

SOUTH SIAM.

REGION	Land Rent Paid	Bldg. Rent Paid	Int. Paid on Debts	Business Costs	All Other Costs	Total Annual Expend.
Naradhivas	0.24	..	..	..	7.00	27.45
Pattani	2.48	2.40	0.06	1.62	27.64	88.31
Songkla .. .. .	..	..	0.43	..	12.37	56.46
Trang	4.10	..	0.30	..	11.32	54.19
Nag. Sridhamaraj ..	0.17	..	0.18	..	6.60	26.79
Surat	0.87	..	0.41	..	12.14	57.06
Jumbor	1.44	..	3.50	..	32.09	99.84
Average South	1.26	0.34	0.70	0.23	15.59	58.59

TABLE XV. C.

Annual Expenditures during 2476.

NORTH SIAM.

REGION	Farm Costs	Animal Costs	Fishing Costs	Food Costs	Clothing Costs	House- hold Costs
Chang Puak (Chiengmai)	3.09	0.01	0.04	13.96	2.29	2.65
Mae Hiah (Chiengmai)	5.39	0.06	0.01	13.08	2.93	1.68
San Mahapon (Chiengmai)	9.91	0.52	0.07	30.58	11.59	11.61
Lampun	4.61	0.14	0.06	31.24	6.15	6.10
Na Kuam (Lampang)	5.87	0.38	0.21	26.51	11.83	7.27
Ban Sadej (Lampang)	3.01	0.03	0.07	6.61	1.85	1.71
Chiengrai	6.31	0.11	0.19	9.54	7.19	2.83
Chiengsen	9.29	0.11	0.04	4.91	2.94	2.32
Mae Kami (Prae)	3.02	..	0.10	8.20	3.34	2.89
Pa Daeng (Prae)	5.70	0.01	0.09	9.47	2.57	2.51
Laplae	23.81	3.87	0.35	23.00	7.37	7.47
Average North	7.27	0.48	0.11	16.10	5.46	4.46

TABLE XV. C.—(contd.).

Annual Expenditures during 2476.

NORTH SIAM.

REGION	Land Rent Paid	Bldg. Rent Paid	Int. Paid on Debts	Business Costs	All Others Costs	Total Annual Expend.
Chang Puak (Chiengmai)	1.96	..	0.53	..	9.66	34.19
Mae Hiah (Chiengmai)	3.57	..	3.01	..	7.36	37.09
San Mahapon (Chiengmai)	5.33	0.60	2.05	..	41.74	114.00
Lampun	3.29	0.12	0.59	4.19	25.20	81.69
Na Kuam (Lampang) .. ..	..	..	..	..	19.40	71.47
Ban Sadej (Lampang)	0.19	..	0.02	..	8.27	21.76
Chiengrai	0.97	..	..	0.30	8.98	36.42
Chiengsen	0.44	..	..	..	5.91	25.96
Pa Daeng (Prae)	2.60	..	0.18	..	8.13	28.46
Mae Kami (Prae)	1.97	..	0.04	..	8.92	31.28
Laplae	2.34	..	1.53	..	19.13	68.87
Average North	2.06	0.06	0.73	0.41	14.79	51.93

TABLE XV. D.

Annual Expenditures during 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Farm Costs	Animal Costs	Fishing Costs	Food Costs	Clothing Costs	House- hold Costs
Bangkok	12.75	0.48	4.08	64.72	9.98	10.15
Nontaburi	79.81	..	1.45	145.32	25.23	23.55
Chaxeragsao	47.34	21.15	1.81	52.52	12.67	9.42
Dhanyaburi	53.56	9.06	2.56	50.44	14.99	15.15
Ayuthia	59.36	0.03	2.43	58.77	16.99	12.41
Lopburi	24.62	0.06	2.76	40.50	9.78	7.47
Saraburi	18.52	0.34	0.17	33.45	8.81	6.36
Supanburi	24.94	0.02	0.62	30.40	16.79	8.17
Uthai Dhani	12.53	0.53	0.99	26.20	8.82	6.72
Pitsanulok	9.71	0.06	0.88	17.09	8.28	7.00
Bejraburi	19.21	0.08	0.37	28.47	6.80	5.57
Average Central	33.76	2.89	1.65	49.80	12.65	10.18
CHANTABUN.						
Ta Mai	280.95	2.35	..	148.77	25.22	18.39
Klong Naraya	14.07	0.04	..	39.94	8.12	7.33

TABLE XV. D.—(contd.).

Annual Expenditures during 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Land Rent Paid	Bldg. Rent Paid	Int. Paid on Debts	Business Costs	All Other Costs	Total Annual Expend.
Bangkok	16.56	0.92	7.17	..	25.01	160.82
Nontaburi	2.20	2.10	11.88	42.29	110.33	444.16
Chaxerngsao	17.92	..	11.96	0.25	19.90	194.94
Dhanyaburi	56.72	0.33	17.20	..	25.56	245.57
Ayuthia	40.29	..	18.14	..	30.45	238.87
Lopburi	9.89	..	11.76	2.00	31.89	140.73
Saraburi	9.46	..	13.11	..	16.42	106.64
Supanburi	17.63	..	22.99	..	24.26	145.82
Uthai Dhani	8.97	..	10.98	..	16.45	92.19
Pitsanulok	0.25	..	4.18	..	12.59	60.04
Bejraburi	35.30	..	11.47	..	15.12	122.89
Average Central	19.56	0.30	12.80	4.05	29.82	177.46
	CHANTABUN					
Ta Mai	0.53	..	11.85	..	50.59	538.65
Klong Naraya	6.71	..	5.19	..	13.84	95.24

TABLE XVI. A.

Percentage Distribution of Annual Expenditure during 2476.

NORTH-EAST SIAM.

REGION	Farm Costs	Animal Costs	Fishing Costs	Food Costs	Clothing Costs	House- hold Costs
Nongkai	2.34	0.31	3.33	40.50	13.46	9.89
Udorn	3.27	1.05	3.42	26.81	13.25	13.80
Khonkaen	19.38	0.79	6.52	12.30	13.12	16.01
Pu Vieng	20.22	0.17	5.07	15.67	16.82	11.98
Sakolnagor	11.65	0.71	6.73	11.46	16.83	14.69
Ubol	29.63	0.48	1.32	24.52	8.11	4.92
Khukan	27.33	0.77	2.69	21.37	4.72	5.97
Nag. Rajasima	15.59	0.11	0.37	35.17	10.31	11.99
Average North-east	11.26	0.47	3.41	29.48	12.61	11.26

TABLE XVI. A.—(contd.).

Percentage Distribution of Annual Expenditure during 2476.

NORTH-EAST SIAM.

REGION	Land Rent Paid	Bldg. Rent Paid	Int. Paid on Debts	Business Costs	All Other Costs	Total Annual Expend.
Nongkai	1.06	..	..	5.93	23.18	100%
Udom	0.97	..	..	..	37.41	100%
Khonkaen .. .. .	..	..	..	..	31.87	100%
Pu Vieng .. .. .	..	..	..	..	30.07	100%
Sakolnagor	1.16	..	..	..	36.76	100%
Ubol	0.60	..	0.12	..	30.29	100%
Khukan	1.06	..	0.38	..	35.71	100%
Nag. Bajasima	0.79	..	5.22	..	20.44	100%
Average North-east	0.78	..	0.85	2.23	27.65	100%

TABLE XVI. B.

Percentage Distribution of Annual Expenditure during 2476.

SOUTH SIAM.

REGION	Farm Costs	Animal Costs	Fishing Costs	Food Costs	Clothing Costs	House- hold Costs
Naradhivas	6.78	..	0.15	37.67	13.59	15.45
Pattani	3.06	0.05	0.02	40.53	7.16	10.46
Songkla	9.79	0.14	0.09	47.10	9.99	10.22
Trang	10.28	0.09	0.17	39.53	10.87	10.06
Nag. Sridhamaraj	16.46	0.37	0.11	37.03	12.65	7.43
Surat	11.39	0.79	0.16	44.72	11.57	8.73
Jumbor	4.27	0.20	2.14	37.94	9.16	9.19
Average South	7.53	0.22	0.60	40.83	9.93	9.97

TABLE XVI. B.—(contd.).

Percentage Distribution of Annual Expenditure during 2476.

SOUTH SIAM.

REGION	Land Rent Paid	Bldg. Rent Paid	Int. Paid on Debts	Business Costs	All Other Costs	Total Annual Expend.
Naradhivas	0.87	..	..	..	25.50	100%
Pattani	2.81	2.72	0.07	1.83	31.30	100%
Songkla .. .. .	..	..	0.76	..	21.91	100%
Trang	7.57	..	0.55	..	20.88	100%
Nag. Sridhamaraj ..	0.63	..	0.67	..	24.64	100%
Surat	0.65	..	0.72	..	21.27	100%
Jumbor	1.44	..	3.51	..	32.14	100%
Average South	2.15	0.58	1.19	0.39	26.61	100%

TABLE XVI. C.

Percentage Distribution of Annual Expenditure during 2467.

NORTH SIAM.

REGION	Farm Costs	Animal Costs	Fishing Costs	Food Costs	Clothing Costs	House- hold Costs
Chang Puak (Chiengmai)	9.04	0.03	0.11	40.83	6.70	7.75
Mae Hiah (Chiengmai)	14.53	0.16	0.03	35.26	7.90	4.53
San Mahapon (Chiengmai)	8.69	0.46	0.06	26.82	10.17	10.18
Lampun	5.64	0.17	0.07	38.24	7.53	7.47
Na Kuam (Lampang)	8.21	0.53	0.29	37.09	16.55	10.17
Ban Sadej (Lampang)	13.83	0.14	0.32	30.38	8.50	7.86
Chiengrai	17.33	0.30	0.52	26.19	19.74	7.77
Chiengsen	35.79	0.42	0.15	18.91	11.33	8.94
Pa Daeng (Prae)	10.61	..	0.35	28.81	11.74	10.15
Mae Kami (Prae)	18.22	0.03	0.29	30.27	8.22	8.02
Laplae	26.79	4.35	0.39	25.88	8.29	8.41
Average North	14.00	0.92	0.21	31.00	10.51	8.59

TABLE XVI. C.—(contd.).

Percentage Distribution of Annual Expenditure during 2476.

NORTH SIAM.

REGION	Land Rent Paid	Bldg. Rent Paid	Int. Paid on Debts	Business Costs	All Other Costs	Total Annual Expend.
Chang Puak (Chiengmai)	5.73	..	1.55	..	28.25	100%
Mae Hiah (Chiengmai)	9.63	..	8.12	..	19.84	100%
San Mahapon (Chiengmai)	4.68	0.53	1.80	..	36.61	100%
Lampun	4.03	0.14	0.72	5.13	30.85	100%
Na Kuam (Lampang) .. ..	..	..	..	..	27.14	100%
Ban Sadej (Lampang)	0.87	..	0.09	..	38.01	100%
Chiengrai	2.66	..	..	0.82	24.66	100%
Chiengsen	1.69	..	..	..	22.77	100%
Mae Kami (Prae)	9.14	..	0.63	..	28.57	100%
Pa Daeng (Prae)	6.30	..	0.13	..	28.52	100%
Laplae	2.63	..	1.72	..	21.53	100%
Average North	3.97	0.11	1.41	0.79	28.48	100%

TABLE XVI. D.

Percentage Distribution of Annual Expenditure during 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Farm Costs	Animal Costs	Fishing Costs	Food Costs	Clothing Costs	House- hold Costs
Bangkok	13.52	0.30	2.54	40.24	6.21	6.31
Nontaburi	17.97	..	0.33	32.72	5.68	5.30
Chaxerngsao	24.28	10.85	0.93	26.94	6.50	4.83
Dhanyaburi	21.81	3.69	1.04	20.54	6.10	6.17
Ayuthia	24.85	0.01	1.02	24.60	7.11	5.20
Lopburi	17.49	0.04	1.96	28.78	6.95	5.31
Saraburi	17.37	0.32	0.16	31.37	8.26	5.96
Supanburi	17.10	0.01	0.43	20.85	11.51	5.60
Uthai Dhani	13.59	0.57	1.07	28.42	9.57	7.29
Pitsanulok	16.17	0.10	1.47	28.46	13.79	11.66
Bejraburi	15.70	0.07	0.30	23.26	5.56	4.55
Average Central	19.02	1.63	0.93	28.06	7.13	5.74
CHANTABUN						
Ta Mai	52.16	0.44	..	27.62	4.68	3.41
Klong Naraya	14.77	0.04	..	41.94	8.53	7.70

TABLE XVI. D.—(contd.).

Percentage Distribution of Annual Expenditure during 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Land Rent Paid	Bldg. Rent Paid	Int. Paid on Debts	Business Costs	All Other Costs	Total Annual Expend.
Bangkok	10.30	0.57	4.46	..	15.55	100%
Nontaburi.. ..	0.50	0.47	2.67	9.52	24.84	100%
Chazerngsao	9.19	..	6.14	0.12	10.21	100%
Dhanyaburi	23.10	0.13	7.00	..	10.41	100%
Ayuthia	16.87	..	7.59	..	12.75	100%
Lopburi	7.03	..	8.36	1.42	22.66	100%
Saraburi	8.87	..	12.29	..	15.40	100%
Supanburi	12.09	..	15.77	..	16.64	100%
Uthai Dhani	9.73	..	11.91	..	17.84	100%
Piteanulok	0.42	..	6.96	..	20.96	100%
Bejraburi	23.84	..	9.37	..	12.35	100%
Average Central	11.02	0.17	7.21	2.28	16.80	100%
	CHANTABUN					
Ta Mai	0.10	..	2.20	..	9.39	100%
Klong Naraya	7.05	..	5.45	..	14.53	100%

TABLE XVII. A.

Profit and Loss on Annual Transactions during 2476.

NORTH-EAST SIAM.

REGION	Total Annual Income	Total Annual Expenditure	2476 OPERATING	
			Profit	Loss
Nongkai	112.43	88.87	23.56	..
Udorn	18.69	25.66	..	6.97
Khonkaen	24.08	25.29	..	1.21
Pu Vieng	12.23	17.36	..	5.13
Sakolnagor	14.08	15.45	..	1.37
Ubol	13.64	16.64	..	3.00
Khukan	7.60	10.39	..	2.79
Nag. Rajasima	38.58	36.94	1.64	..
Average North-east	30.16	29.58	0.58	..

TABLE XVII. B.

Profit and Loss on Annual Transactions during 2476.

SOUTH SIAM.

REGION	Total Annual Income	Total Annual Expenditure	2476 OPERATING	
			Profit	Loss
Karadhivas	27.11	27.45	..	0.34
Pattani	152.73	88.31	64.42	..
Songkla	58.09	56.46	1.63	..
Trang	54.63	54.19	0.44	..
Nag. Sridhamaraj	33.64	26.79	6.85	..
Burat	74.56	57.06	17.50	..
Jumbor	116.37	99.84	16.53	..
Average South	73.89	58.59	15.30	..

TABLE XVII. C.

Profit and Loss on Annual Transactions during 2476.

NORTH SIAM.

REGION	Total Annual Income	Total Annual Expenditure	2476 OPERATING	
			Profit	Loss
Chang Puak (Chiengmai)	33.44	34.19	..	0.75
Mae Hiah (Chiengmai)	47.53	37.09	10.44	..
San Mahapon (Chiengmai)	160.58	114.00	46.58	..
Lampun	91.19	81.69	9.50	..
Na Kuam (Lampang)	113.14	71.47	41.67	..
Ban Sadej (Lampang)	26.24	21.76	4.48	..
Chiengrai	45.51	36.42	9.09	..
Chiengsen	33.59	25.96	7.63	..
Pa Daeng (Prae)	34.37	28.46	5.91	..
Mae Kami (Prae)	37.22	31.28	5.94	..
Laplae	94.49	88.87	5.62	..
Average North	65.20	51.93	13.27	..

TABLE XVII. D.

Profit and Loss on Annual Transactions during 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Total Annual Income	Total Annual Expenditure	2476 OPERATING	
			Profit	Loss
Bangkok	154.65	160.82	..	6.17
Nontaburi	472.87	444.16	28.71	..
Chazerngsao	124.87	194.94	..	70.07
Dhanyaburi	264.96	245.57	19.39	..
Ayuthia	257.10	238.87	18.23	..
Lopburi	192.16	140.73	51.43	..
Saraburi	125.48	106.64	18.84	..
Supanburi	135.96	145.82	..	9.86
Uthai Dhani	111.10	92.19	18.91	..
Pitsanulok	69.89	60.04	9.85	..
Bejraburi	121.01	122.39	..	1.38
Average Central	184.56	177.46	7.10	..
	CHANTABOON			
Ta Mai	112.20	95.24	16.96	..
Klong Naraya	543.00	538.65	4.35	..

CHAPTER XIII.

EXTRAORDINARY INCOME AND EXPENDITURE.

INTRODUCTION.

Earnings are not the only sources of income, nor are operating and maintenance costs the only fields of expenditure. We must deal in this chapter with the income which does not accrue from earnings or from sale of capital assets, and we must consider the expenditures which are neither for operations or maintenance nor for investment. Let us turn first to the expenditures.

EXTRAORDINARY EXPENDITURES.

The costs of medical care and treatment are the first type of expenditure which will be considered under this heading. In most countries it is possible to average these costs and to consider them as annual expenditures,—a part of the costs of upkeep and maintenance. In Siam this practice does not seem desirable. Minor illnesses and affections cost the Siamese extremely little or nothing: various unscientific medicines can be bought in the markets, but the greater amount of those used are probably herbs and roots gathered in the nearby jungle without any payments. Notably holy or experienced persons are sometimes employed to exorcise the evil spirits who are believed to cause illness but, more often, the spirits are appeased by simple offerings of fruit and flowers which cost the householder nothing.

Serious illnesses, on the other hand, sometimes cost a good deal; but their expensiveness is chiefly determined by the ability of the sick person to pay. Treatments are usually unscientific and of little value, but certain medicines in which the Chinese place great faith are sold to credulous Siamese for considerable sums of money.

It is found that the medical costs in rural Siam are either so small as to be insignificant or so large as to make them clearly different from normal maintenance of good health. They could not be considered as investments and, since they were found only under very unusual circumstances and in the households of the richest individuals, it was considered unreasonable to treat them as annual expenditures. They are therefore treated in this chapter as extraordinary expenditures.

The second category of these costs consists of gifts to the temples, ordination costs, and costs of ceremonies. Many Siamese will feel on reading this report that such expenditures should not be treated as "extraordinary," but it was found impracticable to do otherwise. Probably all rural Siamese households give food to the priests at least once a week on Wan Phra, and most households give food several times a week if not daily. The value of these food gifts is not included here but must be considered as a part of the food costs and home produced foods used by the family. They could not be separated from food costs because the rural Siamese woman prepares the food for her household and then, after it is all prepared, sets aside an amount sufficient for one or two people and presents it to the priests.

Gifts to the temples and costs of ceremonies depend entirely on the piety of the individual and the amount which he can afford to spend. Piety increases with age. Very poor people make no gifts to the temple except in the form of food but they contribute their manual assistance when a new building or repairs are needed by the priests. Rich people give a great deal, especially when they are well along in years. Poor people need pay only a few Baht for a cremation: wealthy people spend as much as they please. Cremations in Bangkok sometimes cost many thousand Baht.

It is impossible to consider these costs as operating or maintenance costs, and it is equally clear that they cannot be considered as investments.

Social costs,—gifts to relatives and friends, belong for the same reason in this category: they can't be put anywhere else.

Court fees, lawyer's fees, and fines are included here under

the heading "Civil Costs". They are plainly not investments, and they are not annual in nature.

Gambling losses are put in the "Extraordinary Expenditure" category also together with a few other charges which seem to belong nowhere else.

The divisional averages per household are as follows:

DIVISION	Medical Costs	Ecl. Costs	Social Costs	Extra. Civil Costs	Gambling Losses and Other	Total Extra. Costs
North-east	0.52	4.51	0.64	0.55	0.24	6.46
South	2.93	6.51	0.69	0.34	1.88	12.35
North	1.47	6.95	1.38	0.54	0.02	10.36
Center	5.45	21.12	2.58	2.22	1.19	32.55

Before discussing these data let us inspect the figures for income which is of somewhat the same character.

EXTRAORDINARY INCOME.

We will consider as "Extraordinary Income" all cash or commodity gifts received during the year, and all gambling gains and profits earned by illegal operations. The first of these may be considered roughly as the opposite of the Social Costs listed above, and the second as the opposite of "Gambling Losses and Other".

The divisional data are as follows:

DIVISION	Gifts Received	Gambling Gains and Illegal Earnings	Total Extra. Income
North-east	0.97	..	0.97
South	0.59	0.24	0.83
North	0.58	0.03	0.61
Center	4.22	0.66	4.88

Ecclesiastical costs,—gifts to temples and costs of ceremonies,—account for more than half of the extraordinary expenditure in all areas of Siam. Without considering the daily food gifts to the priests at all, the average household of the North-east, South, and

North gives to the temple and spends on ceremonies more than it spends on either clothing or household supplies. In the Center the amount which goes to the temple is more than clothing and household costs together. This average expenditure is a very high one when we remember that many households have difficulty in paying taxes which amount to less than these averages, but we will find the average ecclesiastical costs are high because of disproportionately high expenditures in the richer regions. The districts which are really burdened by their taxes give very little indeed to the temples.

Divisional variations in medical costs are not of any great importance. The North-east, which has little money to spend, pays less for medical treatments than the other areas.

Social costs,—gifts to relatives and friends,—are much higher in the Center than elsewhere: the situation is even more marked when we consider the average gifts received.

The data on gambling gains and losses show that gambling is most important in South Siam. This is quite in accordance with general belief. In the North-east and the North,—the Lao areas,—we find almost no gambling at all.

The fact that gambling losses are greater than gains was perfectly explained by several individuals of the South and Center who claimed that, although they won their bets as often as they lost, they were nevertheless aware that their gambling resulted in a small deficit every year. A gentleman of Dhonburi made the situation quite clear by saying, "When I lose, I lose; and when I win I celebrate!" We do not need sociological studies to convince us that this attitude is not confined to Dhonburi and is not confined to Siam! Most of the money which the householder takes to the cock fights and card games is either lost or spent on refreshments for all hands. It is the dispensers of cakes and beverages who gain most from the gambling.

The regional data on these various costs and incomes are presented in tables at the end of this chapter.

In the North-east the extraordinary expenditures are highest in all categories except social costs in the Nongkai community. The people here are relatively well-to-do, they can afford to spend money

in ways which are impossible for the poorer villages and, since everybody is fairly well off, there is no need to dispense charity.

In such an isolated region as Pu Vieng the villages are small and scattered, wealth tends to be concentrated in the hands of a few of the older households, and these assume an attitude of some responsibility for the poorer members of the community. In proportion to the average income a considerable amount of charity is dispensed.

All the extraordinary costs are very low in the Khukan village which had the lowest annual income of any village studied by the Survey. The average householder earned only Baht 7.60 during 2476, he had great difficulty in paying any part of his taxes, and he had no funds available for non-utilitarian purposes.

Gambling, in the North-east, is of very scant significance.

In the South the average expenditures under these headings are very variable.

Medical costs are low except in the Jumbor community where a single old man spent Baht 500.00 in 2476 to send his wife to Bangkok for seven months medical treatment. This sum he had to borrow.

In the well-to-do Pattani trading village a single individual gave Baht 400.00 to the temple in 2476. This is the cause of the high average ecclesiastical costs in this village.

Gambling losses are high in the Jumbor village as a result of the ill-advised operations of a single young ne'er-do-well who considered himself expert at playing "Po" and whose wife had brought him a considerable dowry of gold and jewelry. In 2476 he took his Po box into the jungle on various occasions with "friends", lost Baht 365.50, and had to sell most of his wife's gold. He did not seem especially depressed about his losses and said that, after all, he had only had to sell gold: it was not as if he had had to sell his clothing or go without food.

The other extraordinary costs and income show no significant variations from village to village.

In the North there are no very important variations in medical costs. In San Mahapon we find a single individual who paid a considerable sum for scientific medical treatment in Chiengmai.

Large individual gifts to the temples in a few villages are the cause of village fluctuations in the ecclesiastical costs.

Social costs vary somewhat, and are in general highest in the richer communities.

In the Laplae village we find a single individual who had to pay a fine of Baht 110.00 and lawyer's fees of Baht 100.00 in 2476 as a result of unspecified activities. This accounts for the high average Extraordinary Civil Costs of this village.

Gambling, as in the North-east, is quite without importance in rural North Siam.

In the Center incomes are much higher and we find correspondingly greater expenditures for non-utilitarian purposes. There is little need to discuss them in detail; they vary from village to village according to the same principles discussed in the other areas.

The high average income from gambling and illegal earnings in the Lopburi community proceeded mostly from the activities of a single individual who displayed great embarrassment when the investigator found that his expenditures had been much higher than the income which he had reported. He requested the investigator to step aside with him, out of the hearing of neighbors and local officials, and said that he did indeed have a source of income concerning which he had not been specifically questioned and which he greatly preferred not to discuss. In good years, he said, this source had often provided him with as much as Baht 500.00; in 2476 he estimated that he had gained about Baht 200.00 from this source. This sum almost exactly balanced the schedule, and we are justified in assuming that activities of an illegal nature profitted him about Baht 200.00 in 2476.

In the South-east both expenditures and income under this heading seem high. They are due to the same sort of individual variations which have been described for the other areas.

SUMMARY AND CONCLUSIONS.

Medical Costs for the rural Siamese are very low indeed: they are in general even lower than the averages shown by the figures because these averages are chiefly the result of high expendi-

tures on the part of one or two exceptional individuals. We may safely assume that 99% of rural Siamese households spend considerably less than one Baht per year for medical care.

Ecclesiastical Costs are higher and more widespread among the rural people. The average expenditure for the temples is higher than that for clothing or household supplies in all areas. It must be remembered, however, that the temple plays a far more important part in the life of rural Siamese than do the churches of other countries in the lives of their populations. Merely all rural Siamese males spend from three months to three years as novices in the temples, and during that period all food, clothing, and housing are supplied for them. While in the temples they spend considerable time in study, and are enabled to travel to other districts and shrines. In many rural villages all schooling is performed in the "Sala" or meeting and rest house of the temple, and there can be little doubt that the temple system plays a more important part than the governmental schools in maintaining a generally high level of social conduct. Travellers in rural Siam are always welcome to sleep in the sala of the village temple, and migrating households sometimes sleep in the village sala for a number of weeks while building their own houses and becoming established in the community.

The social importance of the temple to rural Siamese is fully equal to the amount which it costs them, and it must be remembered that by far the greater part of the expense is born by those who can best afford it.

Social Costs,—gifts to relatives and friends,—are very widespread among the rural Siamese and are not,—as in the case of the other extraordinary expenditures,—confined to a few wealthy households. The man who has lost his rice crop by some accident can usually get enough rice to see him through to the next harvest simply by asking a relative or friend for it. The same, to a lesser degree, is true even of small cash gifts with which to pay taxes. Except in communities where impoverishment has become very general, as in the village of Changvad Khukan which was studied by the Survey, the man who needs one or two Baht to help him pay his taxes can usually find a friend who will give it to him. Such

transactions, of course, are often regarded as loans on which no interest need be paid; but it is very common for a household to give away a few Baht here and there without any thought of repayment.

The rural Siamese, in general, are a very charitable people: and this is especially true in the Lao areas.

Extraordinary Civil Costs,—fines, lawyer's fees, and the like, —are of course felt most by the few individuals who have engaged in illegal activities. They have no great importance in rural Siam.

Gambling is a topic which has received much more attention than it deserves from serious minded people in Siam. Because of the evils which it undoubtedly causes and leads to among a very few individuals, it has been put on so stringent an illegal basis that unjustified hardships accrue to many rural Siamese who are quite innocent of any real wrong doing. People who wish to gamble are supposed to pay a fee to the Government for the privilege each time that they do so. This requirement is not and cannot be generally enforced, considerable numbers of rural Siamese are put in jail for gambling on a ridiculously small scale and, in the meantime, many well-to-do people in Bangkok and the urban centers gamble in private without any thought of paying the legal fee. The situation, on a small scale, is not unlike that which was created for a short time in America by an extremely injudicious and unfortunate attempt to make all consumption of alcoholic beverages illegal.

The situation is one which leads to a certain amount of bad feeling among the country people, it makes jailbirds of many farmers who cannot be regarded as social undesirables, and the government probably pays more to maintain these people in jail than it receives from such gambling fees as are collected. This, in any case, appears to be the situation in rural Siam.

The evils of gambling among the country people have been very greatly exaggerated. Cock fights and card games are to be found in all parts of the country, but the gamblers are nearly always friends and neighbors, and their average yearly losses on this account are a small fraction of the amount which they are legally supposed to pay for the privilege of gambling. Most of the farmers seem to win as often as they lose, the winners supply refreshments to the

players, and the net profits on the game go to the dispensers of cakes and beverages: professional gamblers do not reap the rewards.

Professional gamblers doubtless do exist in the urban centers, and especially in Bangkok; but very few if any are to be found in the farming villages even during the period after harvest when the people have the most money and the most leisure. Villagers do not gamble on a serious scale. Out of about 1700 rural Siamese households the Survey found only one individual whose gambling had seriously affected his economic status in 2476 and he, because of his gambling, was in general disfavor in his community.⁽¹⁾

We may safely conclude that the rural Siamese are not being victimized by professional gamblers, that they do not gamble among themselves in such a way as to involve significant economic disadvantages, and that their not infrequent imprisonment can do them only harm.

(1) See pages 261 and 312.

TABLE XVIII. A.
Extraordinary Expenditures.
NORTH-EAST SIAM.

REGION	Medical Costs	Eccl. Costs	Social Costs	Extra. Civil Costs	Gam- bling Losses and Other Ex. Costs	Total Extra. Costs
Nongkai	1.09	14.54	0.82	3.00	1.49	20.94
Udon	0.01	3.91	0.12	0.27	..	4.31
Khonkaen	0.66	6.91	0.39	..	...	7.96
Pu Vieng	1.07	1.67	2.17	0.15	0.12	5.18
Sakolnagor	0.58	1.94	0.43	..	0.25	3.20
Ubol	0.37	2.70	0.11	0.05	0.03	3.26
Khukan	0.10	0.21	..	0.29	..	0.60
Nag. Rajasima	0.29	4.22	1.06	0.60	..	6.17
Average North-east	0.52	4.51	0.64	0.55	0.24	6.46

TABLE XVIII. B.

Extraordinary Expenditures.

SOUTH SIAM.

REGION	Medical Costs	EccI. Costs	Social Costs	Extra. Civil Costs	Gam- bling Losses and Other Ex. Costs	Total Extra. Costs
Naradhivas	0.38	3.69	0.07	..	..	4.14
Pattani	0.46	16.86	1.32	..	1.13	19.77
Songkla	1.19	2.92	1.00	0.10	0.25	5.46
Trang	1.07	1.98	0.01	0.20	0.80	4.05
Nag. Sridhamaraj ..	0.41	2.22	0.10	0.10	0.02	2.86
Surat	1.67	11.02	0.31	1.25	0.50	14.75
Jumbor	15.33	6.86	2.03	0.75	10.45	35.42
Average South	2.93	6.51	0.69	0.34	1.88	12.35

TABLE XVIII. C.

Extraordinary Expenditures.

NORTH SIAM.

REGION	Medical Costs	Eecl. Costs	Social Costs	Extra. Civil Costs	Gam- bling Losses and Other Ex. Costs	Total Extra. Costs
Chang Fuak (Chiangmai)	0.86	4.93	..	..	..	5.79
Mae Hiah (Chiangmai)	0.17	4.18	0.30	..	0.20	4.85
San Mahapon (Chiangmai)	8.00	11.28	3.20	0.62	..	23.10
Lampun	0.74	4.78	1.97	..	0.01	7.50
Na Kuam (Lampang)	1.40	14.44	3.41	..	..	19.25
Ban Sadej (Lampang)	0.27	1.11	0.40	..	..	1.78
Chiengrai	0.80	6.93	4.75	..	..	12.48
Chiengsen	0.73	1.76	0.08	..	..	2.57
Pa Daeng (Prae)	0.43	2.63	0.16	0.04	..	3.26
Mae Kami (Prae)	0.10	4.15	0.43	..	..	4.68
Laplae	2.62	20.28	0.53	5.25	..	28.68
Average North	1.47	6.95	1.38	0.54	0.02	10.36

TABLE XVIII. D.
Extraordinary Expenditures.
CENTRAL AND SOUTH-EAST SIAM.

REGION	Medical Costs	EccI. Costs	Social Costs	Extra. Civil Costs	Gam- bling Losses and Other Ex. Costs	Total Extra. Costs
Bangkok	3.70	22.52	1.49	1.13	1.89	30.73
Nontaburi	18.02	57.25	3.67	6.48	0.98	86.39
Chaxerngsao	6.36	9.01	0.52	..	5.58	21.46
Dhanyaburi	11.22	36.30	1.62	1.50	1.06	51.70
Ayuthia	4.60	39.53	5.70	2.00	1.35	53.18
Lopburi	4.85	20.80	2.88	0.15	0.38	29.06
Saraburi	1.12	11.13	0.28	2.00	0.88	15.41
Supanburi	3.31	11.17	2.23	9.30	0.75	26.76
Uthai Dhani	2.30	5.24	0.45	1.15	0.07	9.21
Pitsanulok	1.50	9.42	5.63	0.50	0.13	17.18
Bejraburi	2.92	9.89	3.88	0.25	0.03	16.97
Average Central	5.45	21.12	2.58	2.22	1.19	32.55
	CHANTABUN					
Ta Mai	14.40	41.38	3.88	..	1.36	61.02
Klong Naraya	6.21	11.91	0.30	0.10	0.40	18.92

TABLE XIX. A.

Extraordinary Income during 2476.

NORTH-EAST SIAM.

REGION	Gambling gains and illegal sources	Gifts Received	Total Extraordinary Income
Nongkai	1.20	1.20
Udon	1.90	1.90
Khonkaen	1.33	1.33
Pu Vieng	1.04	1.04
Sakolnagor	0.85	0.85
Ubol	0.43	0.43
Khukan	0.68	0.68
Nag. Rajasima	0.35	0.35
Average North-east	0.97	0.97

TABLE XIX. B.

Extraordinary Income during 2476.

SOUTH SIAM.

REGION	Gambling gains and illegal sources	Gifts Received	Total Extraordinary Income
Naradhivas .. .. .	..	2.24	2.24
Pattani .. .. .	..	0.03	0.03
Songkla	0.01	..	0.01
Trang	1.68	0.33	2.01
Nag. Sridhamaraj .. .. .	..	0.65	0.65
Surat .. .. .	..	0.88	0.88
Jumbor .. .. .	..	0.03	0.03
Average South	0.24	0.59	0.83

TABLE XIX. C.

Extraordinary Income during 2476.

NORTH SIAM.

REGION	Gambling gains and illegal sources	Gifts Received	Total Extraordinary Income
Chang Puak (Chiengmai)	0.60	0.60
Mae Hiah (Chiengmai)
San Mahapon (Chiengmai)
Lampun	0.38	1.23	1.61
Na Kuam (Lampang)	1.12	1.12
Ban Sadej (Lampang)	0.25	0.25
Chiengrai	1.25	1.25
Chiengsen
Pa Daeng (Prae)	1.60	1.60
Mae Kami (Prae)	0.20	0.20
Laplae	0.13	0.13
Average North	0.03	0.58	0.61

TABLE XIX. D.

Extraordinary Income during 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Gambling gains and illegal sources	Gifts Received	Total Extraordinary Income
Bangkok	0.54	8.96	9.50
Nontaburi .. .. .	..	12.28	12.28
Chaxerngao	0.93	0.85	1.78
Dhanyaburi	0.50	8.43	8.93
Ayuthia	0.20	6.83	7.03
Lopburi	5.09	0.13	5.22
Saraburi .. .. .	..	2.01	2.01
Supanburi .. .. .	..	1.72	1.72
Uthai Dhani .. .. .	..	0.05	0.05
Pitsanulok .. .. .	..	0.88	0.88
Bejraburi .. .. .	..	4.26	4.26
Average Central	0.66	4.22	4.88
	CHANTABUN		
Ta Mai .. .. .	..	5.50	5.50
Klong Naraya	0.12	1.06	1.18

CHAPTER XIV.

CAPITAL INCOME AND EXPENDITURE: INVESTMENT AND LIQUIDATION.

INTRODUCTION.

In several preceding chapters it has been necessary to consider investments and liquidation in comparison with income and expenditures of an annual nature. In the present chapter it will be necessary to refer briefly to these again, and to consider such other forms of investment and liquidation as were involved in 2476 with the financial transactions of the Siamese rural communities.

Debts and loans will not be considered here. They form a particular kind of capital transactions which must be dealt with separately and in considerable detail. We are here concerned with those goods and commodities whose purchase is to be considered as an investment, and whose sale represents liquidation.

In the economically undeveloped regions of Siam, as in most farming countries where formal arrangements for investment are not provided extensively by credit institutions, the farmer who has excess funds can invest them only by buying land, cattle, gold, and silver or by loaning them to neighbors. In the same regions the farmer who has lost money on his yearly operations and is unable to pay his necessary expenses can obtain money only by selling land, cattle, gold and silver, or by borrowing money from neighbors. We know from our study of annual income and expenditure that there were in 2476 a number of Siamese communities which made considerable profits on their operations: we expect to find that the same communities have invested their surpluses. We know also that certain other communities earned so little in 2476 that they could not cover their yearly expenses: we expect to find that they raised money by selling capital goods.

When a farming community is, on balance, investing, it is clear that it is placing itself in an improved economic condition. With more land, cattle, and heavy equipment the farmer can produce more crops. When a farming community is, on balance, liquidating, it is equally certain that its economic situation is deteriorating. It is therefore important that we should know which districts invested and which districts liquidated in 1946, and it is desirable that we should know the ways in which investment and liquidation took place.

CAPITAL EXPENDITURE: INVESTMENT.

Investments in land, buildings, cattle, agricultural equipment, and fishing equipment have already been briefly considered. Investments in gold and silver, and in a few other articles, must now be tabulated and compared with the other forms of investment.

The divisional data per household are as follows:

DIVISION	Land Bought	Bldg. Costs	Animals Bought	Agri. Equip. Bought	Fish. Equip. Bought	Gold and Silver Bought	All Other Investments	Total Capital Expend.
North-east ..	0.97	7.01	2.04	0.63	1.11	0.38	1.41	13.55
South	2.43	3.85	0.81	0.06	0.32	1.24	0.92	9.63
North	2.11	7.49	3.02	0.48	0.06	0.40	2.25	15.81
Center	16.99	8.94	6.43	0.43	0.66	1.80	1.65	36.90

Investments in the North-east amounted to nearly half the costs of operations and maintenance, in the North they were nearly a third of the annual costs, and in the South and Center they were about a fifth of annual expenditure. In proportion to their opportunities it is clear that the Lao areas of North-east and North Siam are far more progressive than the Center and South. This fact has been pointed out before, and it receives further confirmation from the figures on investment in gold and silver which are not productive investments. Although gold and silver can be bought in all the market towns of the North and North-east the average Lao farmer of these areas spends very little for them,—Baht 0.38 in the North-east and Baht 0.40 in the North. These figures are very low and in each case they form less than 3% of the total investment.

In the South total investments are very low in spite of the fact that the average farmer of these regions earns more and could better afford to invest in productive equipment than the Lao. Nearly 13% of the Southern farmer's investment is for unproductive gold and silver.

The investments of the Center are dominantly productive, but the amount invested is small in proportion to income and the percentage invested in gold and silver is nearly double that of the North and North-east.

In the North-east three quarters of the investment is for land, buildings, and cattle. Although the investments are large in proportion to annual income and expenditure, they are very small in actual cash value; and over half must be put into necessary building costs.

Investments in 2476 bore a fairly close relationship to annual incomes. The Nongkai community invested an amount equal to more than half its earnings, and it is probable that this is a situation which obtained in many villages of comparable economic development in the North-east. Continued losses in the past few years have drained the cash savings of the more rural villages and forced them to turn to the richer villages for cash to cover their taxes and other expenses. Such a community as that near Nongkai received profitable opportunities to invest in cattle and land because poorer villages were obliged to liquidate them.

The Khukan village, with very low earnings and a considerable deficit for the year, invested almost nothing at all.

In the South a situation is found which parallels that in the North-east except that much smaller amounts were invested. The Pattani village, with high earnings, invested considerably more than any other district studied.

The low building costs of this area are remarkable. It has been pointed out that the population is in general very unprogressive and that houses are not commonly repaired until they are ready to fall apart. The Southern farmers are more given to spending money on diversions and gambling than the people of other areas, and we note that the investment in unproductive gold and silver forms a very high proportion of the total investment.

In the North the investments are of the same character as in the North-east. Nearly half goes for building costs, and high proportions are invested in land and cattle. Investments in the two richest villages studied,—San Mahapon and Na Kuam,—are considerably higher than elsewhere.

In the Center nearly half of all investments were in land. Building costs are not appreciably higher than in the other areas, and the greater investments made possible by higher incomes are put into land and cattle.

Total investments, of course, were higher in the Nontaburi village than elsewhere. Incomes were much higher, and the village has retained a position of financial strength during the depression years. A surprisingly large amount was invested in land by the farmers of Supanburi.

In the South-east the two villages studied show totally different situations. Amphur Ta Mai, with its very high income, invested very little indeed in productive assets, and spent a very large amount on gold and silver. Klong Naraya invested an amount which was large in proportion to its income and which was put chiefly into land.

CAPITAL INCOME: LIQUIDATION.

The sums of money raised by average households of the various divisions by liquidating capital assets were as follows:

DIVISION	Land Sold	Bldgs. Sold	Capital Animals Sold	Gold and Silver Sold	All Other Liquidation	Total Capital Income
North-east	0.48	0.03	2.47	0.51	0.89	4.37
South .. ..	..	..	6.63	2.64	0.74	10.01
North	0.28½	0.41	4.03	0.36	1.39	6.47
Center	14.20	1.41	9.51	10.53	10.06	45.71

The contrast between the Lao areas of the North and North-east and the Central and Southern areas is made more marked by the figures on liquidation than it was by the data on investments. Liquidation in the North and North-east was small and, in the villages

studied, amounted to considerably less than the investment. Liquidation in the South and Center was greater than investment. We will consider this balance in more detail after discussing briefly the forms of liquidation in the four areas.

The North-east and North liquidated to almost the same degree and in almost the same ways. Land and buildings were not sold to any appreciable extent, about the same amounts of gold and silver were sold as were bought, and the bulk of the liquidation was of farm animals including cattle and pigs.

The South sold no land or buildings, but realized a good deal on farm animals and on silver and gold.

In the Center considerable land was liquidated and, in most communities, there were extensive sales of paddy which had been held in stock for a number of years. These sales are considered under the heading "All Other Capital Sales" and were responsible for the bulk of the liquidation in this category. One farmer of the Ayuthia village sold 150 kwien of paddy which he had bought as an investment several years ago.

In the South-east liquidation was about half the value of investment and, in each village, was chiefly in the same commodities.

BALANCE OF INVESTMENT & LIQUIDATION.

Comparison of investments with liquidation results in the following figures:

DIVISION	Total Capital Income	Total Capital Expenditure	2476 Capital	
			Profit (Net Liquidation)	Loss (Net Investment)
North-east	4.87	13.55	..	9.18
South	10.01	9.63	0.38	..
North	6.47	15.81	..	9.34
Center	45.71	56.90	8.81	..

On balance, the rural population of North-east and North Siam tended to invest in 2476. The farmers of the South liquidated slightly more than they invested. On balance, the rice farmers of the Center liquidated.

In the North-east, although most villages showed small deficits on their operations during the year, all but one invested more than they liquidated. The net investment of the Nongkai community was very high. In the Udorn village, which suffered the biggest loss on operations in 2476, and in the village of Changvad Khukan the net investments were very low.

In the South the only community which invested very much more than it liquidated was that near Pattani: like the Nongkai village it maintained a position of financial strength during the past few years,

The high figure of net liquidation in the Jumbor village is not so significant as it appears because nearly half of it is due to sales of pigs which were bred in this village.⁽¹⁾

In the North nearly all villages showed a profit on their operations during 2476, and nearly all invested more than they liquidated. In most cases the figure for net investment is not far from the figure for operating profits.

In the Center Net investment and liquidation seem not to be so closely correlated with operating profits and losses in the Center as in other areas. The chief reason for this is the much more extensive use of credit: the farmer with a surplus has become accustomed to loaning it, and the farmer with a deficit has become accustomed to borrowing. The communities which were, in comparison with others, decidedly well-to-do in 2476 tended to invest; and those which made big losses in 2476 did tend to liquidate but it will be found that the data on agricultural credit afford a more valuable indication of economic conditions in this area than the figures for net investment and liquidation.

In the South-east both the villages studied tended to invest more than to liquidate in 2476. In Amphur Ta Mai, a commercialized pepper-planting region, agricultural credit plays a more important part than transfer of capital assets in disposing of surpluses and meeting deficits.

(1) It was necessary to consider pigs sales as liquidation for reasons which are discussed in Chapter IV.

TABLE XX. A.

Capital Expenditure: Investment in Capital Goods in 2476.

NORTH-EAST SIAM.

REGION	Land Bought	Bldg. Costs	Animals Bought	Agri. Equip. Bought	Fish. Equip. Bought	Gold and Silver Bought	All Other Capital Costs	Total Capital Expend.
Nongkai ..	2.50	39.38	4.27	1.80	6.28	2.20	11.31	67.74
Udon ..	0.10	1.18	1.22	..	..	..	..	2.50
Khonkaen ..	3.43	4.59	2.12	1.40	1.57	0.30	..	13.41
Pu Vieng ..	0.43	7.63	1.10	0.88	..	0.49	..	10.53
Sakolnagor ..	0.30	1.31	3.16	0.20	0.90	..	..	5.87
Ubol ..	..	1.75	1.38	0.55	0.10	..	..	3.78
Khukan ..	..	0.25	0.43	..	..	..	..	0.68
Nag. Rajasima	1.00	..	2.65	0.20	..	..	..	3.85
Average North-east ..	0.97	7.01	2.04	0.63	1.11	0.38	1.41	13.55
Percentage North-east ..	7.16	51.73	15.06	4.65	8.19	2.80	10.41	100.00%

TABLE XX. B.

Capital Expenditure: Investment in Capital Goods in 2476.

SOUTH SIAM.

REGION	Land Bought	Bldg. Costs	Animals Bought	Agri. Equip. Bought	Fish. Equip. Bought	Gold and Silver Bought	All Other Capital Costs	Total Capital Expend.
Naradhivas ..	0.38	0.97	0.06	..	..	0.74	..	2.15
Pattani ..	12.58	7.87	..	..	..	4.75	6.26	31.46
Songkla ..	1.25	0.53	1.50	..	..	0.81	..	4.09
Trang ..	..	4.66	2.20	..	..	..	..	6.86
Nag. Sridhamaraj..	..	0.55	0.92	0.40	..	0.43	..	2.30
Surat ..	2.83	5.48	0.95	..	0.28	1.75	..	11.29
Jumbor ..	..	6.91	0.05	..	1.94	0.22	0.16	9.28
Average South ..	2.43	3.85	0.81	0.06	0.32	1.24	0.92	9.63
Percentage South ..	25.23	39.98	8.41	0.62	3.32	12.88	9.55	100.00%

TABLE XX. C.

Capital Expenditure: Investment in Capital Goods in 2476.

NORTH SIAM.

REGION	Land Bought	Bldg. Costs	Animal Bought	Agri. Equip. Bought	Fish. Equip. Bought	Gold and Silver Bought	All Other Capital Costs	Total Capital Expend.	
Chang Puak (Chiengmai) ..	..	2.63	1.65	0.58	..	..	..	4.86
Mae Hiah (Chiengmai) ..	..	3.59	2.52	0.30	..	..	1.16	7.57
San Mahapon (Chiengmai) ..	5.00	3.24	6.27	..	..	..	17.25	31.76
Lampun ..	1.95	0.71	2.42	1.40	0.52	..	0.63	7.63	
Na Kuam (Lampang) ..	2.50	45.61	8.79	1.25	..	3.29	4.37	65.81	
Ban Sadej (Lampang) ..	..	0.28	0.40	..	..	..	..	0.68
Chiengrai ..	2.10	1.26	3.25	0.40	..	..	0.21	7.22
Chiengsen ..	3.38	3.67	4.43	1.34	0.15	..	..	12.96
Pa Daeng (Prae) ..	..	2.01	1.37	..	..	..	0.25	3.63
Mae Kami (Prae) ..	..	9.74	1.40	..	..	0.80	0.06	12.00
Laplae ..	8.25	9.70	0.71	..	..	0.30	0.85	19.81
Average North	2.11	7.49	3.02	0.48	0.06	0.40	2.25	15.81
Percentage North	13.35	47.38	19.10	8.04	0.38	2.53	14.23	100.00%

TABLE XX. D.

Capital Expenditure: Investment in Capital Goods in 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Land Bought	Bldg. Costs	Animals Bought	Agri. Equip. Bought	Fish. Equip. Bought	Gold and Silver Bought	All Other Capital Costs	Total Capital Expend.
Bangkok ..	..	8.03	1.31	..	1.84	0.81	0.38	12.37
Nontaburi ..	107.00	39.60	..	..	0.20	12.75	4.31	163.86
Chaxerngsao ..	..	2.75	29.71	..	1.16	0.28	3.56	37.46
Dhanyaburi ..	..	6.28	9.30	0.48	2.66	3.75	4.41	26.88
Ayuthhia ..	..	4.90	5.53	0.75	1.13	..	0.69	13.00
Lopburi ..	18.50	7.39	1.30	..	..	..	..	27.19
Saraburi ..	13.25	8.50	8.20	1.70	0.04	0.17	..	31.86
Supanburi ..	37.25	3.68	5.51	0.33	..	1.87	4.63	53.27
Uthai Dhani ..	2.88	3.51	5.95	1.38	..	0.13	..	13.85
Pitsanulok ..	8.00	8.86	0.75	..	0.05	..	0.13	17.79
Bejraburi ..	..	4.90	3.23	0.13	0.13	..	..	8.39
Average Center ..	16.99	8.94	6.43	0.43	0.66	1.80	1.65	36.90
Percentage Center ..	46.04	24.23	17.43	1.17	1.79	4.88	4.47	100.00%
CHANTABUN								
Ta Mai ..	..	37.91	0.85	1.38	0.28	31.45	2.53	74.40
Klong Naraya	28.23	6.46	1.76	1.88	0.56	0.43	..	39.32

TABLE XXI. A.

Capital Income: Sales of Capital Goods in 2476.

NORTH-EAST SIAM.

REGION	Land Sold	Bldgs. Sold	Capital Animals Sold	Gold and Silver Sold	All Other Capital Sales	Total Capital Income
Nongkai	1.25	..	1.00	3.68	6.25	12.18
Udon	0.60	..	0.75	..	0.50	1.85
Khonkaen	2.00	0.23	1.60	..	0.10	3.93
Pu Vieng .. .. .	..	..	4.85	0.15	..	5.00
Sakonagor .. .. .	..	..	8.84	..	..	8.84
Ubol .. .. .	..	..	0.92	..	0.15	1.07
Khukan .. .. .	..	..	0.60	..	..	0.60
Nag. Rajasima .. .. .	..	..	1.24	0.25	..	1.49
Average North-east	0.48	0.03	2.47	0.51	0.88	4.37
Percentage North-east	10.98	0.69	56.52	11.67	20.14	100.00%

TABLE XXI. B.

Capital Income: Sales of Capital Goods In 2476.

SOUTH SIAM.

REGION	Land Sold	Bldgs. Sold	Capital Animals Sold	Gold and Silver Sold	All Other Capital Sales	Total Capital Income
Naradhiwas	6.19	..	..	6.19
Pattani
Songkla	8.73	..	..	8.73
Trang	10.23	0.83	2.24	13.30
Nag. Sridhamaraj	2.18	0.13	..	2.30
Surat	9.39	0.37	..	9.76
Jumbor	9.69	17.15	2.93	29.77
Average South	6.63	2.64	0.74	10.01
Percentage South	66.23	26.37	7.39	100.00%

TABLE XXI. C.

Capital Income: Sales of Capital Goods in 2476.

NORTH SIAM.

REGION	Land Sold	Bldgs. Sold	Capital Animals Sold	Gold and Silver Sold	All Other Capital Sales	Total Income Capital
Chang Puak (Chiangmai)	0.90	0.20	0.22	..	..	1.32
Mae Hiah (Chiangmai)	0.18	0.36	4.26	..	6.36	11.16
San Mahapon (Chiangmai) .. ..	..	0.33	1.96	2.40	1.97	6.66
Lampun .. ..	..	..	1.04	0.13	..	1.17
Na Kuam (Lampang) .. ..	..	2.43	18.30	..	0.50	21.23
Ban Sadej (Lampang) .. ..	..	..	0.68	..	0.01	0.69
Chiengrai .. ..	..	..	6.94	0.37	5.30	12.61
Chiengsen	2.00	1.20	7.56	..	0.66	11.42
Pa Daeng (Prae) .. ..	..	..	0.65	..	..	0.65
Mae Kami (Prae) .. ..	..	..	2.67	..	0.54	3.21
Laplas .. ..	..	..	..	1.02	..	1.02
Average North	0.28	0.41	4.03	0.36	1.39	6.47
Percentage North	4.33	6.34	62.29	5.56	21.48	100.00%

TABLE XXI. D.

Capital Income: Sales of Capital Goods in 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Land Sold	Bldgs. Sold	Capital Animals Sold	Gold and Silver Sold	All Other Capital Sales	Total Capital Income
Bangkok .. .. .	..	..	0.99	8.68	4.19	13.86
Nontaburi	19.25	2.25	..	41.38	1.78	64.66
Chaxerngsao	6.00	..	50.29	4.99	2.97	64.25
Dhanyaburi	35.00	0.20	18.48	5.10	1.36	60.14
Ayuthia .. .. .	..	9.25	6.35	16.86	83.06	115.52
Lopburi	11.50	..	1.69	0.92	7.00	21.11
Saraburi	68.50	..	12.80	11.65	2.01	94.96
Supanburi	16.00	0.10	1.67	11.85	3.18	32.80
Uthai Dhani .. .. .	..	..	2.35	3.14	4.69	10.08
Bitsanulok .. .. .	..	3.76	0.59	5.79	..	10.14
Bejraburi .. .. .	..	..	9.34	5.50	0.37	15.21
Average Center	14.20	1.41	9.51	10.53	10.06	45.71
Percentage Center	31.07	3.08	20.81	23.04	22.01	100.00%
	CHANTABUN					
Ta Mai .. .. .	..	..	..	35.25	2.24	37.67
Klong Naraya	10.00	..	1.60	7.66	..	19.26

TABLE XXII. A.

Profit and Loss on Transactions in Capital Goods⁽¹⁾ in 2476.

NORTH-EAST SIAM.

REGION	Total Capital Income	Total Capital Expenditure	2476 CAPITAL	
			Profit (Net Liquidation)	Loss (Net Investment)
Nongkai	12.18	67.74	..	55.56
Udon	1.85	2.50	..	0.65
Khonkaen	3.93	13.41	..	9.48
Fu Vieng	5.00	10.53	..	5.53
Sakonagor	8.84	5.87	2.97	..
Ubol	1.07	3.78	..	2.71
Khukan	0.60	0.68	..	0.08
Nag. Rajasima	1.49	3.85	..	2.36
Average North-east	4.37	13.55	..	9.18

(1) Changes in outstanding credit,—loans and debts,—are not included in this table.

TABLE XXII. B.

Profit and Loss on Transactions in Capital Goods⁽¹⁾ in 2476.

SOUTH SIAM.

REGION	Total Capital Income	Total Capital Expenditure	2476 CAPITAL	
			Profit (Net Liquidation)	Loss (Net Investment)
Naradhivas	6.19	2.15	4.04	..
Pattani .. .. .	..	31.46	..	31.46
Songkla	8.73	4.09	4.64	..
Trang	13.80	6.86	6.44	..
Nag. Sridhamaraj.	2.30	2.30	..	..
Surat	9.76	11.29	..	1.53
Jumbor	29.77	9.28	20.49	..
Average South	10.01	9.63	0.38	..

(1) Changes in outstanding credit,—loans and debts,—are not included in this table.

TABLE XXII. C.

Profit and Loss on Transactions in Capital Goods⁽¹⁾ in 2476.

NORTH SIAM.

REGION	Total Capital Income	Total Capital Expenditure	2476 CAPITAL	
			Profit (Net Liquidation)	Loss (Net Investment)
Chang Puak (Chiengmai)	1.32	4.86	..	3.54
Mae Hiah (Chiengmai)	11.16	7.57	3.59	..
San Mahapon (Chiengmai)	6.66	31.76	..	25.10
Lampun	1.17	7.63	..	6.46
Na Kuam (Lampang)	21.23	65.81	..	44.58
Ban Sadej (Lampang)	0.69	0.68	0.01	..
Chiengrai	12.61	7.22	5.39	..
Chiengsen	11.42	12.96	..	1.54
Pa Daeng (Prae)	0.65	3.63	..	2.98
Mae Kaml (Prae)	3.21	12.00	..	8.79
Laplae	1.02	19.91	..	18.79
Average North	6.47	15.81	..	9.34

(1) Changes in outstanding credit,—loans and debts,—are not included in this table.

TABLE XXII. D.

Profit and Loss on Transactions in Capital Goods⁽¹⁾ in 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Total Capital Income	Total Capital Expenditure	2476 CAPITAL	
			Profit (Net Liquidation)	Loss (Net Investment)
Bangkok	13.86	12.37	1.49	..
Nonlaburi	64.66	163.86	..	99.20
Chaxerngsao	64.25	37.46	26.79	..
Dhanyaburi	60.14	26.88	33.26	..
Ayuthia	115.52	13.00	102.52	..
Lopburi	21.11	27.19	..	6.08
Saraburi	94.96	31.86	63.10	..
Supanburi	32.80	53.27	..	20.47
Uthai Dhani	10.18	13.85	..	3.67
Pitsanulok	10.14	17.79	..	7.65
Bejraburi	15.21	8.39	6.82	..
Average Center	45.71	36.90	8.81	..
CHANTABUN				
Ta Mai	37.67	74.40	..	36.73
Klong Naraya	19.26	39.32	..	20.06

(1) Changes in outstanding credit,—loans and debts,—are not included in this table.

CHAPTER XV.⁽¹⁾

AGRICULTURAL CREDIT: THE FARMER'S DEBTS AND LOANS.

INTRODUCTION.

The debts⁽²⁾ of the Siamese farmer have been the subject of much discussion and considerable anxiety to the nation and its well-wishers during the past few years. It is fitting and proper that this should be the case, inasmuch as the economy of the Kingdom depends almost wholly on the farming situation and the debts of the farmer play a very important part in this situation, but the data acquired by the Second Rural Economic Survey show clearly that there is no need for exaggerated fears in this respect. The Siamese farmer is not, as a rule, overwhelmed by debts or by exorbitant rates of interest; and the well-considered gradual development of the Cooperative Societies has done much to establish the foundations on which the agricultural credit of the future will be soundly built.

Before considering the actual data acquired on the situation as it was at the end of B. E. 2475, during the year B. E. 2476, and at the end of that year, we will do well to remind ourselves of a few of the most important factors involved in agricultural credit in general, and in agricultural credit as it works in Siam.

(1) The author wishes to express particular thanks of James Baxter Esq., Adviser to the Ministry of Finance, for reading and criticising this chapter while it was still in manuscript; and to Nai Thanu Satraphai of the Department of Cooperative Societies for assistance in tabulating the statistical data on debts and loans.

(2) The word "debt," as used in this report, refers solely to those sums borrowed by the farmer and which he contracts to repay. The word "loans", as used in this report, refers solely to those sums loaned by the farmer to others.

The fact that the Siamese farmer has debts is not in itself dangerous.

The fact that debts exist simply indicates that credit is being extended and that the poor farmer is able to make arrangements of some sort which permit him the use of larger amounts of money, commodities, or land than those which he actually possesses. When, as is usually the case, there are ties of blood or friendship between the money-lender and the borrower, the lender does not insist on a contract which is unfair to the borrower, and the borrower is ready to make every reasonable effort to pay back the amount he has borrowed in strict accordance with the terms of the agreement. Such debts are not dangerous, and we can make this point very clear by considering an imaginary example.

In round numbers, there are roughly two million households in Siam. Suppose half of these were the households of middle-aged and elderly farmers who had earned, during their life-times, more land and more money than they could profitably use themselves. Suppose the other million households to be those of younger couples who were starting life on their own with less land and less money than they needed to pursue the farming business with profit. Let us now suppose that each of the more well-to-do and elderly households loaned one hundred Baht to one of the younger households which was related to it by blood. If all of these things came to pass we would say that the agricultural debt of Siam was one hundred million Baht but, far from seeing any danger in this high figure, we would consider that the situation was a very healthy one which worked to the advantage of all concerned. The elderly households would have found a way to invest their surplus funds, and the younger ones would have been able to secure the land or money which they needed to farm.

In actual fact, the situation is by no means so simple as the example which we have just considered: a part of our task in the following pages will be to point out in what ways and to what degree the actual situation differs from the example. Such dangers as exist in the agricultural credit of Siam will thus be uncovered.

The farming business, by its very nature, makes debts almost

a necessity. No farming country, however rich, is free of agricultural indebtedness.

The farming business differs from industrial enterprise in that its seasonal character, dependent on climatic changes and the seasonal cycle of plant life, concentrates financial needs and profits into two well marked periods of each year. Funds are needed in the planting season in order to prepare the soil and crop for development: funds are earned at the end of the harvesting season when the crops are sold.

The result of this periodicity is the need of the farmer, in every part of the world, to contract what are known as short-term debts. He borrows funds to prepare his soil and planting at one time of the year, and he repays his debt when the crops are marketed at another time of the year.

In a commercialized agricultural economy it is not desirable for the farmer, even if he can afford it, to keep and spend his own funds for this purpose because, if he keeps his money as cash savings from one harvest to the following planting season, he must forfeit the interest which the money could have been earning in the intervening period. Therefore, in a commercialized economy, the farmer invests his funds when they are earned in some institution which will pay him yearly interest for the use of his money; and he borrows, perhaps from the same institution, the funds needed in the planting season.

The farmer's other need is for long-term borrowing of larger amounts which will enable him to buy land, improve his equipment, and increase his earning capacity. These funds he cannot hope to repay save after a number of years and the credit needed does not differ in any essential,—save the type of security offered,—from the credit made use of by industrial enterprise.

These two needs of the farmer for borrowed money are met in a variety of ways according to the development of commercialized agriculture, the availability of sound investment facilities in non-agricultural enterprises, and the inherited or acquired preferences of the farmers themselves.

In a country of uncommercialized agriculture,—where the

greater part of the crops is not sold but is consumed by the farmer himself,—the financial needs of the poor farmers are small and are met by personal contracts with richer farmers who have no better way of investing their surpluses.

In a country of commercialized agriculture,—where the greater part of the crops is sold,—the credit arrangements depend to a considerable degree on the availability of sound investment facilities in non-agricultural enterprises.

When such facilities do not exist, or are not satisfactory, it has been found that the financial needs of the poor farmer are best met by associations to which both rich and poor farmers belong. The well-to-do farmers invest their surpluses in the association, and the association then lends the funds so received to farmers who have need of them and whose personal reliability is considered satisfactory by all members of the association. The rich farmer has the advantage of being able to invest his funds with the assurance that they will not be lost, and the poor farmer has the advantage of borrowing funds on which he need pay no more than a fair rate of interest. As in the case of the personal contracts mentioned above, the most important factor in the whole arrangement is the method by which the responsibility of the debtor-farmers is determined and assured. This is done by making all the members of the association responsible for each other's debts. If one member fails to repay the funds which he has borrowed, the others must combine to repay them. No single farmer who has loaned his funds can lose the whole amount due to the default of a single debtor: when a member fails to pay his debt to the society every lending member loses a small amount of his investment and every borrowing member finds himself a little deeper in debt. The result of this is that all the members are directly interested in every loan which is made by the society: they consider carefully before deciding whether or not the loan should be made, and afterward they examine the way in which the borrower has employed the borrowed money. No man is allowed to belong to the association unless the other members know him and believe that he will make every effort to repay the amounts which he is allowed to borrow. The result of this is that the associations must be rather

small and that the membership must be limited to those neighboring farmers who know each other intimately and who have adequate opportunity for scrutinizing each other's financial and agricultural operations.

The Raiffeisen system in Germany and many types of Co-operative Societies are good examples of this sort of association in which funds are loaned out by farmers and are borrowed by farmers. They have been extremely successful in nearly all parts of the world because of the close supervision of debtor members which is exercised by neighboring farmers who do not wish their own investments in the association to be jeopardized.

In a country of commercialized agriculture where investment in industrial or other non-agricultural enterprises is both possible and desirable, the financial needs of the farmers are best met by institutions or associations which lend to poor farmers the capital fund made available by governments, other financial institutions, and private investors; and which will invest the surpluses of rich farmers in sound enterprises of all natures. The impetus toward formation of such associations or institutions commonly comes from non-farmers,—either from financial interests in non-farming regions or from governmental organizations concerned with the development of agricultural economy.

The Credit Foncier of France was founded in this way, and many other private and governmental credit organizations have been developed in other parts of the world. The weakness of such systems is that the personal reliability of the borrowing farmers is difficult to supervise by organizations which do not have close contact with the daily life of the farmers. Many farm banks have failed for this reason, and other organizations such as the Credit Foncier have gradually been obliged to restrict their loans chiefly to large land-owners and to cut down their extension of credit to poor and unknown farmers. To solve this difficulty,—in order to make it possible for funds from sources unconnected with agriculture to be invested with safety in the smaller scale individual farmers,—a type of Cooperative Society has been developed which differs from the Cooperative Societies mentioned above simply in the fact that its

funds are not derived primarily from the farmers, All members of each society are responsible for each loan made by the society. When a debtor fails to pay his debt all the other members of the society must combine to repay it and their debts are proportionately increased. In this way the society's investments are safeguarded and, provided that the members are conscientious and responsible individuals, the society does not risk failure any more than the Cooperative Society which uses only the funds which it can obtain from farmers. The Siamese Cooperative Society system is an example of this type of organization.

The success or failure of all Cooperative Societies is determined almost wholly by the extent to which the individual members are held responsible for each other's debts and are able to examine the way in which each advance of funds is utilized. In a farming country where the rural population is well established and where the members of each community are well known to each other, the society performs valuable service and is itself on a sound basis. In an industrial or farming region where the members of the community are transient, or are prevented by distance or other factors from knowing each other intimately, the society cannot be successful as neither the society itself nor its individual members have any adequate guarantee that advances of funds from the society will be repaid. It is almost wholly for this reason that cooperative societies which advance credit for other than farming purposes often fail and that, in such a country as the United States of America where distances between farms are great and the farming population is not well settled, even agricultural cooperative societies are not likely to be successful.

We shall see that the agricultural credit of the greater part of Siam is of the type which has been described as typical of countries of uncommercialized agriculture: both lenders and borrowers are primarily the farmers themselves, and the reliability of the individual debtor is a matter which does not concern the community and is of interest only to the individual lender.

The farming population of Siam is well settled, and the members of each community know each other well. Conditions,

therefore, are satisfactory for the development of agricultural co-operative societies, and this fact has been demonstrated beyond question by the success which, even in a time of poor prices for crops, has attended their development. Expansion has been well controlled but has nevertheless proceeded at a fairly rapid rate: if the movement had been allowed to develop too fast for adequate central and local control it would have failed completely and left the farming population worse off than it was before. We will revert to the Siamese Cooperative Societies on a later page after we have considered the data on agricultural credit acquired by the Second Rural Economic Survey.

**DEBTS: THE SUMS WHICH AVERAGE RURAL SIAMESE
HOUSEHOLDS OWE TO OTHERS.**

In our imaginary example of a preceding page we considered the agricultural debt situation as it would be if each of one million households loaned one hundred Baht to one of a million others. If that were the case we would say that the agricultural debt of the nation was one hundred million Baht, and that the debt of the average Siamese household was fifty Baht.⁽¹⁾ Let us now consider the data acquired by the Survey and see what the actual average debts were in the different regions studied. These figures we can compare with some advantage to those of the First Survey. The comparisons are not exact because a number of households were studied by one survey and omitted by the other, but it is probable that the averages by divisions are not far from the truth in either survey.

(1) In our example, of course, no single household would actually be indebted fifty Baht. Every household would either be one hundred Baht in debt or would have one hundred Baht in outstanding loans. In the assumed population of two million households, however, there would be a total debt (and total loans) of one hundred million Baht. We would say, therefore, that the average household had a debt of fifty Baht and a loan of fifty Baht.

DIVISION	End of ⁽¹⁾	End of	End of	End of
	2472	2473	2475	2476
North-east	12.11	14.20	5.96	6.77
South	7.97	10.32	6.48	9.59
North	23.67	29.91	14.66	17.16
Center	163.24	190.36	231.45	233.82

The outstanding fact of importance to be derived from these figures is that the North-east and South, where most of the crops are raised for home consumption and there has been little development of commercialized agriculture, are areas of very low average indebtedness. The Northern Division which, as we have seen in our data on the farming business, is an area where agriculture is gradually becoming commercialized, has an average indebtedness about twice as large as the North-east and South. The Center, where rice is produced abundantly for market, has an average indebtedness about ten times that of the North. This relatively high average debt of Central Siam seems, at first glance, to be a somewhat dangerous phenomenon but, on the other hand, we have already pointed out that debts are inalienable from commercialized agriculture, and our detailed data on indebtedness will show that debts incurred by borrowing money are not likely to cause any serious harm to the farmers of Central Siam at the present time.

The second significant fact to be derived from these figures is that indebtedness appears to have decreased appreciably in North-east, South, and North Siam during the years B. E. 2474 and 2475 while, in Central Siam there appears to have been a fairly regular increase during B. E. 2473, 2474, and 2475 which did not continue to any marked extent in 2476. We will consider these changes in indebtedness more profitably in the light of the detailed regional data. These are presented in Tables XXIII at the end of this chapter.

(1) All figures are average in Baht: Satang per household. Those of B. E. 2472 and 2473 are taken from pages 216—223 of the First Survey's report.

Debts in the North-east. The regional data from the North-east show us at once that, aside from the countryside in the near neighborhood of Nagor Rajasima itself, there is practically no indebtedness at all. If the village near Nagor Rajasima had not been studied by the Survey our data for the North-east would have shown an average indebtedness of Baht 1.22 at the end of 2476 and of Baht 0.56 at the end of 2475. Much the same thing is found in the regional data of the First Survey.

Our data on Farming have already shown us that the region about Nagor Rajasima is the only part of North-east Siam where non-glutinous rice is raised to any appreciable extent at all. Its strategic position as the railway gateway to North-east Siam has made it the only region in the area where agriculture has become somewhat commercialized, and the indebtedness of the region is the natural corollary of this fact.

As between the periods covered by the two surveys, the indebtedness of the Nagor Rajasima region has been cut in half: the slight increase which took place there in 2476 is of no significance.

Such other changes in indebtedness in the North-east as may be indicated by the data are equally without importance: it is evident that the farmer who grows his crops for home consumption in the North-east is not and has not been obliged to incur debts of any great significance.

A notable fact, however, is that shown by the data from the Khukan region. There the average debt was very low and quite comparable with the low debts of other North-eastern regions but, unlike them, this low debt was distributed among twenty one of the forty households studied. The average debt for the village was Baht 2.28 at the end of 2476, and the average debt of those families which actually were in debt was at the very low figure of Baht 4.70. The reason for this is that the village is a very poor one in which actual money is required, primarily, only to pay the head tax of Baht 4.00 and the land tax. Being near the railroad, the village had a period of unexpected affluence while the railroad was in course of construction and there were laborers who paid cash for food. Since that time the prosperity of the village has decreased to such a point

that over half the families studied have been obliged to borrow small sums of from two to ten Baht to pay their taxes. It is notable that most of this borrowing took place in 2476, and we most suppose that the finances of the village are at a precariously low ebb. This does not mean that any of its inhabitants are likely to suffer from want of food, clothing, or housing,—these they produce for themselves in adequate quantity,—but it does mean that the government is likely to derive very little income indeed from this village for some time to come. Taxes here can be paid only with borrowed money.

Debts in the South. The divisional data from the South show much the same situation as in the North-east. The regional data show that most of the indebtedness was concentrated in the Jumbor region, but we find from page 220 of the First Survey's report that this was not the case in 2472 or 2473. The marked increase in indebtedness in the Jumbor region is chiefly due to a large sum of Baht 500.00 borrowed by one individual to pay for medical treatment for his wife in Bangkok. It is also true that floods and other factors have greatly damaged the crops in the vicinity of this village in the past few years. This has been the case to so great a degree that the national government has lowered its fruit-tree taxes until conditions improve.

The report of the First Survey shows relatively high debts in Bhuket and Naradhivas. Bhuket, as a region primarily given over to tin mining, was omitted from the 2477 Survey, and we can assume that its indebtedness is chiefly due to a local commercialization of market gardening and rice culture as the result of a large non-farming population which must buy food. The Naradhivas region appears to have cut down its indebtedness in the period intervening between the two surveys, but the two surveys studied different villages in this province and the relatively high average debt in 2473 may have been due to some such local crop failures as have since obtained in the Jumbor village.

It is noteworthy that indebtedness increased in all the Southern regions studied by the Survey during 2476, but the amounts of increase are small except near Jumbor, where it was due to a

single unusual circumstance, and we may assume that they do not indicate a condition of any gravity.

Debts in the North. The divisional data from the North show much the same situation as in the North-east and South except that, coincidentally with some commercialization of agriculture, the amounts involved are somewhat larger.

The regional data of the two surveys can be compared for only a few villages which were studied by both and, of these, the only significant change appears to have taken place in Mae Kami, Changvad Prae. At the end of 2473 this village had an average indebtedness of Baht 42.32 and, at the end of 2476, this average debt had dropped to Baht 1.38. The most likely reason for this apparent change is that the First Survey happened to include in its sample one or two families which, due to exceptional circumstances, had piled up large debts. The economic status of the village relative to others studied in the North is not greatly different in the data of the two surveys, and it seems very probable that this suggestion is the true explanation of an apparently great change in debt. It must be remembered that so small a sample as forty or fifty families cannot be expected to give exact averages on all points. Fluctuations in the sampling do occur no matter how carefully they are guarded against, and they lead to occasional apparent discrepancies.

The average indebtedness of the North, as calculated by the First Survey, was raised by the inclusion of two relatively commercial villages near Chiangmai,—San Sai and San Kambaeng. The former grows much of the garden produce consumed in Chiangmai, and the latter produces most of the Chiangmai textiles of commerce. These two villages were omitted by the Second Survey as atypical and Laplae, a region near Utaradit much given to fruit farming, was included. This latter region had the relatively high average indebtedness at the end of 2476 of Baht 92.85 chiefly as a result of commercialization of fruit culture, or recent poor prices for the fruit crops, and the loss of income formerly obtained by elephant owners from the timber interests. The elephants are still there and they cannot be sold, they cost a good deal in upkeep, and adverse conditions in the logging industry have practically wiped out all chance of

the villagers being able to obtain employment for their elephants.

The increase in indebtedness during 2476 of the Northern villages is not important except in the case of the Laplae region.

Decrease in the divisional averages between 2473 and 2475 probably reflects a real occurrence, but it is due in part to the inclusion by the earlier survey of two atypical villages.

Debts in the Center. In Central Siam,—the area of commercialized rice production,—the divisional data of the two surveys seem to show a progressive increase in indebtedness from 2472 to 2476. The increase during 2476 was so slight as to have no significance and, when we consider the regional data of the two surveys, we see that most regions show a decrease in indebtedness during the period intervening between the two surveys. This decrease reflects the conditions found in the North-east, the South, and the North. The reason that this does not appear in the divisional data is that Nontaburi,—a highly commercialized pottery producing region with the high average debt of Baht 563.21,—was included in the Second Survey and omitted by the First.

Average indebtedness in Central Siam evidently ranges roughly between one hundred and five hundred Baht. It is unlikely that many agricultural regions exceed two hundred and fifty Baht.

The region which shows the greatest percentage of debt increase in 2476 is Chaxerngsao, and we know from Chapter XII that this was the region with the greatest operating deficit in 2476. The average household of this village appears to have suffered an operating loss of Baht 70.07 during the year, and it is clear from the data on debts that this loss was chiefly covered by borrowed money. In 2472 and 2473, however, the indebtedness of the community was considerably higher than at the end of 2476.

Debts in the vicinity of Bangkok appear to have increased regularly from 2472 to 2476. This is probably due in large part to the low prices which the fine rice crops of this region have been bringing.

There are only two other regions of Central Siam where indebtedness appears to have increased significantly during 2476,—Supanburi and Nontaburi. In the former region the crops of the

past few years have not been as good as was expected: it is likely that the large dam erected by the Irrigation Department will improve conditions. In Nontaburi the debt increase is due in part to low fruit prices and in part to the difficulty of collecting payment on pottery sales in the past few years.

Notable decrease in indebtedness took place during 2476 in the villages studied in Saraburi, Ayuthia, Dhanyaburi, and Pitsanulok. In Saraburi and Dhanyaburi this was due largely to land foreclosures: if these foreclosures had not taken place the average debt of 2476 would have been approximately what it was in 2475. In the Ayuthia village the reduction consisted wholly of cash repayments,—a very healthy indication,—and in Pitsanulok it consisted chiefly of the proportional exemption from indebtedness granted by the Cooperative Societies in 2476 to this region because of widespread disasters to the crops.

Debts in the South-east. Amphur Ta Mai has an average income from crops which is double the next largest income from this source found in any other village of Siam, and this large income is due to pepper cultivation on a highly commercialized scale. Data from this amphur were not collected by the First Survey, so we have no indication of what the conditions may have been in 2472 and 2473. The average debt in 2475 was considerably below the average for the Central Division but, by the end of 2476, it had climbed above the average for the Center and showed the highest average debt increase found in Siam. It is impossible to point to any one factor as the cause of this. The chief reason, probably, is the practice of the middlemen in this region of advancing credit for supplies during the planting season and of taking the whole crop, or as much of it as they can get, at harvest time. The system is decidedly unsatisfactory as many farmers have only a very inaccurate idea of the value of the goods which they have received on credit, and no very exact idea of the value of the crop which the storekeeper collects in payment. The middlemen-shopkeepers, on the otherhand, must compete with each other in advancing large amounts on credit to farmers whose crops may or may not turn out to be of value at the end of the season. The farmer takes all he can get on credit,

and the middleman takes as much of the crop as he can get without a lawsuit.

The continued spread of the fungus disease which attacks the pepper plantations has also played an important part in weakening the economic status of the region. This has been discussed in some detail in Chapter II.

The debt situation in the more typical fruit and rice growing countryside of South-east Siam is probably not very different from what it is in the very similar districts of South Siam. Klong Naraya, as a result of its good situation at the base of a low mountain range, probably has better soil and a better fruit crop than the countryside in general and so, although we have no proof of it, we are not likely to be wrong in assuming that the average indebtedness of South-east Siam as a whole is well below that of Klong Naraya. Conditions in this village appear to have been good for some years past, and we may note that average indebtedness seems to have been decreasing gradually ever since 2472.

CREDITORS AND DEBTORS: THE MONEY-LENDERS, MIDDLEMEN, LANDLORDS, AND FARMERS.

We have pointed out, in the introduction to this chapter, the very high importance of the relationship between creditor and debtor. Nearly all the debts of Siam consist of personal contracts between the moneylender and the borrower, and the relationship between the two is what determines the amount of money to be loaned, the amount of interest which is to be demanded, and the security which is to be required.

When, as is often the case, the contract is between two members of the same family, there is much more likelihood that the terms of the agreement will be kept than if the contract is between two individuals who have between them no ties of blood or friendship. The situation which obtains in a great many cases is very much like the one which we assumed in our imaginary example. A young married couple which has been living with the husband's or wife's parents decides to obtain its own land and house, and to set up a separate establishment. For this purpose funds are needed which

the young husband does not own. He therefore borrows what he needs from his own or his wife's parents who are well-established farmers with a certain amount of money savings from previous years. The parents are glad to advance the money without security and, often, without demanding any interest at all. They know the son or daughter will repay them as soon as possible and, if they don't, it doesn't make much difference because the young people would probably have inherited the savings sooner or later anyway. Whatever may be the terms of the agreement, they know that the family relationship between them assures fair and honest treatment on both sides.

If the creditor and debtor are not related, they are usually friends and neighbors of long standing. Interest, a written agreement, and security, are more often demanded in such cases than in the contracts between relatives, but the situation is very much the same. Long and intimate knowledge of each other assures both creditor and debtor of good faith on both sides,

If, on the other hand, the poor farmer who wishes to borrow money is not on good terms with his relatives and neighbors he will not be allowed to borrow money from them and is obliged to go to a professional money-lender or obtain his supplies on credit from a shopkeeper or middleman. In such a case the creditor is aware that the sum he is lending may or may not be repaid, he knows that the farmer who comes to him is quite likely to have been turned down by his relatives and neighbors because of a bad reputation, and the creditor therefore determines to exact as much security and as high a rate of interest as he can get. If he is able to obtain a high rate of interest and security of some value, he is less likely to suffer a heavy loss if, after a few years, the debtor defaults.

Debts to shopkeepers and middlemen vary between the different types mentioned above. A farmer of good reputation and intelligence gets much better treatment from these creditors than a farmer who is generally regarded as a bad risk.

Debt to landlords also vary widely : it is probably safe to say that land rental contracts in the uncommercialized areas carry no great dangers to the farmers but, in the commercialized farming dis-

tricts of Central Siam and especially in the klong regions where the landlords are not themselves farmers, it seems likely that the land rental contracts are more dangerous for the farmers than any others. This we will discuss in more detail later.

On the basis of the foregoing discussion we might be inclined to suppose that the widespread Bangkok belief in the evil agency of Chinese moneylanders and middlemen was justified. Contracts between these people and the Siamese farmers are not cemented by any ties of kinship or friendship, and the energy and enterprise of the Chinese might well be expected to place them in the position of profiteering and grasping money-lenders. The definite information acquired by the Survey shows clearly that this is not the case or, at least, that it is true in only a small percentage of cases.

We will consider first the data on family contracts as given in Tables XXIV at the end of this chapter and as summarized immediately below, and will then take up the figures on debts to Chinese.

DIVISION	DEBTS		LOANS	
	Relatives	Non-relatives	Relatives	Non-relatives
North-east	72.94% ⁽¹⁾	27.06%	16.88%	83.12%
South	84.38%	15.62%	70.15%	29.85%
North	20.33%	79.67%	23.83%	76.17%
Center	48.27%	51.73%	37.35%	62.65%

We note at once that a very high percentage of the Siamese farmer's indebtedness is to relatives.

The percentages from the North-east show a different situation in loans from that obtaining in debts: we will have to investigate the regional data for an explanation of the discrepancy.

(1) These figures were computed in the following way. All debts outstanding at the end of B. E. 2476 which were stated by the debtors to be to relatives, and all those which were stated to be to non-relatives, were added up. Percentages were calculated from the two totals. Debts concerning which definite information on this point was lacking were omitted from the calculation.

The percentages for loans were obtained in the same way.

In the South we find, as we expected, that there is a strong tendency in uncommercialized farming regions for all credit to be held chiefly within the family. In Central Siam nearly half the outstanding credit is within the family, and in North Siam a little less than a quarter of all credit is of this type.

Family Contracts in the North-east. To explain the apparent contradiction in the percentages for debts and loans in the North-east we must look ahead a little to the data on loans. We have already found that nearly all the indebtedness is in the Nagor Rajasima region, and we will find that nearly all the loans are in the Nongkai village. The village studied in the former district is a rice-producing community on the outskirts of Nagor Rajasima: it is plain that funds are borrowed from richer farmers and merchants of the market centers nearer Nagor Rajasima. Since money was borrowed from outside the community itself we find in this village a lower percentage of debts to relatives than elsewhere. Debts in the other North-eastern villages are small, but they are nearly always held within the villages and we find that they are almost 100% to relatives. The rural families which have been able to loan money in the past few years have been few: it is only in the more well-to-do districts that a poor farmer from the outlying countryside can hope to find a lender. Therefore, such loans as we do find in our villages are chiefly to farmers from outside the community, and are not likely to be to relatives. In the Nongkai village there is little need for anyone to borrow money: such money as is loaned therefore goes to poorer farmers of neighboring districts. In the Nagor Rajasima village the same situation holds for debts. It is for this reason that the percentages for debts and loans show different results. Such credit as is extended within the community is chiefly to relatives: if credit must be extended or secured outside the community it is less likely to be a family contract.

The same situation is found in nearly every village studied. Where average loans are bigger than debts, it is clear that the community as a whole is lending to outsiders who are less often related to the lenders than is the case when the debtors are all in the same village. Where average debts are bigger than loans, it is clear

that the community as a whole is borrowing from outsiders and the same situation obtains. In the former case nearly all debts and only a relatively small percentage of loans are to relatives while, in the latter case, nearly all loans and only a small percentage of debts are to relatives.

Loans in all the other North-eastern villages were small and, in many cases, information on the relationship of debtors was not obtained. The village near Udorn, however, seems to show the same situation as the Nongkai community but on a much smaller scale.

Family Contracts in the South. The regional data from the South show the same tendency as that just described in the North-east. Debts to relatives form a very high percentage of all debts in the communities where loans are bigger than debts. Debts to non-relatives become important only in such regions as Jumbor where loans are very small or absent and it is clear that the community as a whole has gone into debt to other regions.

Family Contracts in the North. In the North, although the data fluctuate somewhat in the villages where both debts and loans are small, the same correlation is to be observed.

Family Contracts in the Center and in Chantabun. Both average debts and average loans are higher in the Center and in the two South-eastern villages than in the other areas. In most communities, therefore, much fuller information on family contracts was obtained than in the areas where debts and loans were so small that the percentages obtained might have been unduly affected by fluctuations of sampling.

We find in the Center and in Chantabun much the same situation as in the other areas. A very high percentage of all contracts are between related individuals and this is in general at a maximum for debts where the community has more loans than debts, and at maximum for loans where the community has more debts than loans.

In the Nontaburi village, where loans are very much higher than debts, we would have expected to find a higher percentage of debts to relatives than is actually the case. The reason for this is that much of the credit in this community is of a commercial origin

and connected with the pottery industry. Both loans and debts, therefore, are more likely to be with individuals engaged in other branches of pottery making and retailing and to have been caused not by simple household needs but by the more complicated exigencies of the pottery trade.

In the Bangkok region, where the village studied was one which included a considerable mixture of Siamese, Malays, and Chinese we find both debts and loans are chiefly between non-relatives.

In Amphur Ta Mai, although much of the indebtedness is to middlemen-shopkeepers of whom a considerable number are Chinese, we find that over half the indebtedness is to relatives. There is probably a higher percentage of Chinese blood in the pepper-planters of Ta Mai than in any other agricultural group of Siam except, perhaps, the market gardeners near Bangkok. In a considerable number of cases in Ta Mai the debtor informed the investigators definitely that the Chinese shopkeeper to whom he owed money was closely related to himself or his wife.

Siamo-Chinese Contracts. Because of the widespread conviction in Bangkok that most of the troubles of the Siamese farmer and debtor are to be ascribed to the baleful influence of Chinese moneylenders and middlemen the Second Survey made a determined attempt to get accurate information on the race of the creditor for each debt reported. This information could not always be obtained with accuracy since the Siamese farmer was not always certain whether his creditor was a Siamese by racial heritage, a Siamo-Chinese, or a pure blooded Chinese. In cases of doubt the creditor was described as a Chinese if he was known to speak Chinese fluently. In those cases where the creditor was known to be a Siamo-Chinese, where his racial status could not be determined at all, and where his racial status was Malay, Indian, or any other non-Siamese and non-Chinese race the debts were omitted from the calculation of percentages. The summarized data for those debts for which the creditors were known to be pure Siamese or were

believed to be of Chinese blood are as follows:⁽¹⁾

DIVISION	Siamese Creditors	Chinese Creditors
North-east	99.66%	0.34%
South	84.95%	15.05%
North	87.01%	12.99%
Center	90.52%	9.48%

There can be no doubt that the evil agency of Chinese money-lenders has been grossly exaggerated by public opinion!

The regional data Tables XXV at the end of this chapter show that debts to Chinese form a very small part of the total indebtedness except in a few communities. We will therefore limit our discussion of debts to Chinese to those regions and villages in which over 5% of the indebtedness appears to be to Chinese. These are the villages of Jumbor, Mae Hiah, San Mahapon, Bangkok, Chaxerng-sao, Lopburi, Bejraburi, Ta Mai, and Klong Naraya.

In the Jumbor village we find that 24.25% of the debts are to Chinese: examination of the schedules in detail reveals the fact that nearly all of this indebtedness was incurred by two Siamese residents of the village. One of these men is an opium and liquor dealer, and the other is a professed Po gambler who has been so inexpert as to lose most of the money which his young wife had when he married her. The latter candidly stated that he hoped soon to recoup his fortunes by taking his Po box into the jungle with a certain rich man who would probably fall an easy victim. Neither of these two men was a consistent farmer, and it is entirely probable that their relatives and neighbors refused to lend them any money because of their bad reputations. They therefore went to Chinese in the Changvad center and pledged, respectively, their opium rights and wife's jewelry for the cash they wanted. Other debts to Chinese

(1) Calculations are based on the amount of debts outstanding, not on the number of creditors. Whatever bias is in the figures accentuates the percentage ascribed to Chinese. It is quite certain that every Siamese farmer who considered that he was indebted to a Chinese had a chance to express himself on the subject and that his debt is included in the above calculations.

in this village were small and unimportant as they were in the other Southern villages.

In Mae Hiah the debts to Chinese were three. One of the three debtors was a tile-maker who had evidently secured an advance from the Chinese trader in Chiengmai who retailed his goods; and the other two were farmers who had borrowed at 8% from Chinese in Chiengmai to buy land and farming equipment. All three men were plainly of good character, the debt contracts were honest and bore interest demands well below the legal limit and without evasions of the interest law in the form of advance payments, and they almost certainly obtained their funds in Chiengmai because they were unable to find them in the community itself at the time when they needed them. It often happens, especially in a time of general depression, that funds are not available for loans within the village which requires them.

In San Mahapon the total indebtedness to Chinese was incurred by a single Lao trader. This man obtained all his goods on credit from a Chinese merchant in Chiengmai, he travelled twice a month to Chiengmai to get a fresh stock on consignment and to pay for his last consignment, and he loaned his own excess funds to the Siamese farmers of San Mahapon. The Chinese merchant in Chiengmai demanded no interest on the standing monthly debt which this man maintained, and it is noteworthy that the latter's loans to Siamese within his own village were greater than his debt to the Chinese merchant.

The Siamese of the Bangkok region who were in debt to Chinese had incurred their debts chiefly by buying goods on credit and, in most such cases, no interest was required. One individual had borrowed from a Chinese in order to lend the funds so obtained at a higher rate of interest to local Siamese, another had borrowed large sums at 12% to pay for a cremation, another had borrowed in order to pay his gambling losses, and another had borrowed a large amount many years ago to pay for the lawyer whose legal activities were to keep him out of prison. The latter individual had paid no interest since the time when he borrowed the money although that

had been many years ago and the rate demanded was within the legal limit.

Because of the especial interest which attaches to conditions in the neighborhood of Bangkok, and because the Survey studied 156 families in Phra Kanong instead of the forty which were studied in each of the other communities, we will find it desirable and possible to analyze the debts of this community in more detail than elsewhere.

We have data on 97 debts to Siamese and 41 debts to Chinese. The average individual size of the debts to Siamese is Baht 205.37, and the average size of the 41 debts to Chinese is Baht 118.49.

No interest is demanded on 66 of the debts to Siamese, and on 28 of the debts to Chinese. The average size of these debts without interest is Baht 56.83 in the case of the debts to Siamese, and Baht 25.78 in the case of the debts to Chinese.

Of the 31 debts to Siamese on which interest was demanded, the average rate of demand was 15.11% and the maximum was 24% in the case of one small debt. Average size of these 31 debts was Baht 521.61.

Of the 13 debts to Chinese on which interest was demanded, the average rate of demand was 14.41% and the maximum was 50% in the case of one small debt. Average size of these 13 debts was Baht 318.17.

Total interest demanded on all the debts to Siamese came to 12.27% of the total sum outstanding: total interest on all the debts to Chinese happened to work out at exactly the same figure. Interest actually paid to Siamese creditors in 2476 amounted to 4.31% of the indebtedness, and interest actually paid to Chinese creditors in 2476 amounted to 3.11% of the indebtedness.

The data show that the Chinese of this region demand slightly lower average interest rates than do the Siamese and that they are as often willing to demand no interest as are the Siamese. The Chinese lend money rather seldom, but they advance many commodities on credit. When the Chinese do lend money it is likely to be in relatively large amounts and, in these cases, business like arrangements for written contracts, interest, and security are required.

In the Chaxerngsao region the debts to Chinese proceeded almost wholly from advances of goods on credit. In most such cases

no interest was demanded but, in one, the Chinese trader demanded 30%.

In the community near Lopburi there were four debts to Chinese moneylenders. The farmers had borrowed from them in order to secure the funds with which to buy land. Interest rates on the four debts were 18%, 15%, 12%, and none: very little of this interest was actually paid in 2476.

The greater part of the indebtedness to Chinese in the Bejraburi village consisted of a single debt of Baht 1,500.00. A local Siamese who had gotten himself into difficulties with the law borrowed this sum at 12% from a Chinese in order to hire a lawyer to defend him in court. The lawyer got the money, but the farmer went to prison all the same. He paid no interest and, when he got out of jail, was unable to establish himself as a successful farmer. When interviewed by the Survey in 2477 this man was extremely discouraged and quite ready to blame the Chinese for all his misfortunes. He admitted however that he had received the fifteen hundred Ticals, that the interest demanded was only 12% and non-cumulative, and that he had paid no interest for many years. It is quite likely that the Chinese moneylender considered himself as ill-used as the farmer.⁽¹⁾

Other debts to Chinese in the Bejraburi region were chiefly for goods bought on credit and sums borrowed to buy land. Interest demanded varied from nothing to 18% but, in one case, the creditor was getting more than this in 2476 by collecting half the crop grown on the land which had been bought with the borrowed funds.

In Amphur Ta Mai of Chantabun we find a high percentage of debts to Chinese. Most of these, as has already been indicated, are for food and pepper-plant medicine which are bought on credit; and many of the farmers themselves are related to the Chinese shopkeepers. All of the debts which are to Chinese relatives are without interest and without security, and no interest demand was found in Ta Mai which exceeded the legal limit.

(1) It may well be wondered, in this case, if there had not been sound illegal reasons for the Chinese trader's action in advancing so large a sum to a Siamese who was threatened with imprisonment. The Siamese was questioned on this score and stated that the action which had landed him in jail had had nothing to do with the Chinese who loaned him the money.

The debts to Chinese in Klong Naraya, the other village studied in Chantabun, are chiefly for goods bought on credit from Chinese traders in the Changvad center. Interest is not demanded on most of these debts, and there was no sign of improper practices.

INTEREST DEMANDS AND PAYMENTS ON
DEBTS AND LOANS.

It has already been pointed out that interest is frequently not demanded at all on contracts which are between relatives, and in discussing the Chinese as creditors, we have already examined the interest rates which these people demand and found them well within the legal limit in most cases. We will therefore remember, in discussing the interest demands of Siam as a whole, that we are concerned almost wholly with contracts between Siamese and that any excessive rates which we find are due to demands made by Siamese creditors.

Detailed information concerning interest demands and payments is presented in Tables XXVI at the end of this chapter. The divisional data are as follows:⁽¹⁾

DIVISION	DEBTS		LOANS	
	Interest Demanded	Interest Paid	Interest Demanded	Interest Paid
North-east	7.38%	4.16%	9.06%	13.27%
South	13.55%	10.74%	9.49%	0.82%
North	8.84%	4.95%	7.29%	5.07%
Center	11.25%	5.53%	13.15%	2.14%

(1) Computations were made in the following way:

All interest demands during 2476 were added together, and all debts outstanding at the end of 2475 were added together. The percentage which the interest demands were of the debts was computed from these totals. Interest payments were treated in the same way and, in the case of the loans, the same procedure was followed.

More detailed computations are desirable, but the time available to the statistical staff did not permit of their calculation. The method followed gives results which are susceptible of fair interpretation because both highest and lowest interest demands are usually in the case of the small debts. Debts of appreciable size are usually contracted with written documents and with legal demands.

All the divisional averages are well below the legal limit of 15% and show no features of great significance except that payments during 2476 amounted only to about half the demand.

Interest of the North-east. In the North-east a very high percentage of all credit is between relatives, and the debts and loans are individually small. In most such cases no interest is demanded. The actual number of debts, except near Nagor Rajasima and Khukan, and of loans, except near Nongkai, is so small that the averages for the five regions of Udorn, Pu Vieng, Khonkaen, Sakolnagor, and Ubol cannot be considered as significant. No case of exorbitant and illegal interest demands was found in North-east Siam.

In the village near Nagor Rajasima, however, a special situation exists which should be corrected. It will be noticed that, although the villagers of this community are asked to pay only fair rates of interest to the richer farmers and moneylenders of the Changvad center itself, they have contrived to exact interest payments on their own loans to neighboring farmers which are far in excess of their perfectly legal "demand" and nearly twice the legal limit which they should receive. The reason for this is that these villagers demand that their interest be paid in paddy, and reserve to themselves the right of appraising the value of the paddy. After harvesting season, they put a very low value on the paddy and collect their interest from the poorer farmers. Thereafter they hold the paddy till they can sell it at a price far above the appraisal value, and thereby receive interest amounting to 36.84% of the outstanding loans. The system is not unlike that which obtains among the pepper-planters and shopkeepers of Amphur Ta Mai in Chantabun. It is quite useless to blame moneylender, middlemen, and shopkeepers,—whether Siamese or Chinese,—for this operation. It is one which is performed by Siamese farmers of this region at the expense of their poorer neighbors, and these same farmers find it quite possible to do their own borrowing from the market centers at a fair rate of interest.

Interest in the South. In South Siam we enter an area where debts and loans are very small, and where interest demands vary

from zero to well over 100%. An extremely common practice is to loan money at 10% per month which, if paid, gives the high yearly yield of 120%. In many cases, also, contracts between relatives contain no interest demands but the debtors are expected to pay what they can in paddy, fruits, or money. The amount paid in this voluntary and informal fashion is sometimes above the legal rate as was the case in the Trang village where no interest was demanded on the debts but where the value of commodities and money paid as interest amounted to 19.67% of the indebtedness. The First Survey found average interest demands on debts of 137.83% in the Songkla community and, at the time when the same village was visited by the Second Survey, there were only a few debts outstanding and these did not demand an excessive rate of interest. The Nagor Sri-dhamaraj village was found by the Second Survey to be demanding an average of 96% on its loans, but to have received not one satang of this in 2476.

Interest demands in South Siam are apparently subject to no limitations by law or popular prejudice: they may be zero, or they may be sky high. They fluctuate violently from year to year and from district to district. The lender apparently asks whatever interest he pleases, and the debtor pays whatever interest he pleases.

It is likely that more business like and legal arrangements obtain in the market centers and provincial seats of government. In any case, the indebtedness of the area is low, and there is no reason to suppose that many individuals are seriously inconvenienced by these uneconomic arrangements.

Interest in the North. In North Siam most of the contracts are between relatives and friends. Many contracts are without formal interest demands, and no excessive rates of interest were found. As in the South and North-east interest is sometimes paid on friendly contracts which make no demands. Thus, in San Mahapon we find that more interest was paid on both debts and loans than was actually demanded.

Interest in the Center. In Center Siam, as befits a more commercialized region, interest demands in general average slightly less than the legal limit. The situation as regards debts is approx-

imately the same as regards loans. During 2476 considerably more interest was demanded than was paid, but in only a few cases was the unpaid balance added to the principal of the debt or loan. In Chantabun the same situation obtained.

We may conclude our discussion of interest demands and payments by saying that, although uneconomic practices are found in the South and in parts of the North-east, the Siamese farmers and their creditors in general take their interest demands and obligations rather lightly. Interest is to be paid when possible, in many cases it is paid even when it is not demanded, and in some cases the demands are excessive; but unpaid interest is not often added to the principal of outstanding debts and loans.

In the more commercialized areas where land purchase usually involves a considerable cash outlay the debts and loans are bigger and the interest demands and payments are more carefully drawn up and more strictly observed.

In those cases where high interest demands are made there is no way of enforcing payment, and we may safely conclude that the Siamese farmer does not suffer seriously from interest demands in any part of the Kingdom.⁽¹⁾

DEBT AND LOAN INCREASE: REASONS FOR BORROWING.

We have now examined in some detail the facts regarding the Siamese farmer's indebtedness at the end of B. E. 2476, and have been able to make some generalizations concerning trends in indebtedness during the past five years. These generalizations were affected by a number of factors,—chiefly the fact that the Second Survey did not study, in a number of cases, the same villages studied by the First Survey,—and we did not find it possible to discuss these trends with the same assurance which we can bring to bear on the trends during 2476. We have noted those regions

(1) This statement, of course, applies to rural Siam. Data are not available for the urban centers. Every high interest rates are said to be demanded by certain moneylenders in the cities, but it seems probable that such rates are only in the case of very small debts: illegal rates cannot be enforced. Indian watchmen sometimes lend a few Ticals at the rate of a satang per Tical per day.

in which debts increased during 2476, and we are now in a position to make an analysis of the increase. Significant detail on this question is presented in Tables XXVII, XXVIII, and XXIX at the end of this chapter. Summarized divisional data are as follows:

DIVISION	DEBT INCREASES		LOAN INCREASES	
	Cash and Commodities	Accumulation	Cash and Commodities	Accumulation
North-east	1.32	0.04	2.63	..
South	4.46	0.03	0.22	0.32
North	3.34	0.20	0.50	..
Center	32.98	4.75	2.86	1.53

Several facts are apparent from these figures. The first is that the average North-eastern household of the villages studied by the Survey loaned out more during 2476 than it borrowed. The second is that the communities studied in all the other areas borrowed considerably more than they loaned out in 2476, and the third is that actual transactions in cash or commodities account for all save an insignificant amount of the debt and loan increase in all areas except Central Siam.

The first of these facts has already been made apparent to us in discussing family contracts in the North-east when we were obliged to look forward to the data on loans to explain an apparent contradiction in the data. The village near Nongkai is situated close to the markets of the Changvad center, and is in a much better financial condition than the more distant villages. Consequently it loaned out during 2476 considerable sums to unrelated farmers living in neighboring but poorer and less commercialized districts.

The second fact has not heretofore been made apparent, but it is one which need occasion no alarm. Although it is true that considerably greater amounts were actually borrowed than were loaned by the rural communities of North, South, and Central Siam than were actually loaned in 2476, it will be found that repayments on previous debts largely counterbalance the new sums borrowed.

It is the third of the points mentioned above which has the most interest for us here,—the fact that accumulated unpaid interest, taxes, and land rentals accounted for an appreciable part of the debt increase of 2476 of the Central farmers. This type of increase in debts amounted to an average of Baht 4.75 per household, and that on loans was about a third of this amount. It is clear that such increases, even without any new borrowing, might soon lead to a very serious condition in Central Siam and it behooves us to investigate the situation in detail.

ACCUMULATED UNPAID LAND RENTALS AND INTEREST.

The very great importance of these factors in debt increase is shown by the data of Table XXVIII—D.

Of the eleven villages studied by the Survey in Central Siam only two might be regarded as typical of the most highly commercialized and intensively irrigated rice growing area. These were the villages near Dhanyaburi and Ayuthia which are situated on canals of the Klong Rangsit system, and our data show that the average household of these districts found itself at the end of 2476 with Baht 10.69 in one case and Baht 19.55 in the other of greater debts due to unpaid land rentals. Examination of the schedules in detail shows that the amounts actually borrowed during the year in these villages were only slightly in excess of these increases, and we realize that the land rental situation is of paramount importance to these peasants. Although able to cover their expenses and pay their taxes even in years when the rice crops do not bring high values they are quite unable to pay the land rentals demanded of them.

In a year of good prices for rice, the land rentals would not be excessive and the farmers would have little difficulty in paying them; but during years of low prices the rentals remain unpaid and accumulate. The inevitable result of this situation will be that the peasants will not benefit at all when rice prices rise again but will be obliged to use all of their increased incomes in paying off these debts.

It is not the intent of this report to indicate that the Bangkok landlords are or have been guilty of unfair or domineering practices.

The land rentals were established at a time when they seemed perfectly fair and within the ability of the tenants to pay. The trouble is that they have not been scaled down during the period when rice prices were so low as to make the rentals excessive, and this is no more the fault of the landlords than of the tenants. Any intelligent farmer could have refused to farm land which he knew would not yield him enough to pay the rental, and many undoubtedly did so. Most, however, found it easier to stay on the land without attempting to change the rental contracts because they knew that if they didn't earn the rentals no power on earth could make them pay what they did not have. During the depression years the landlords often did not receive even such rentals as might have been paid if the land had been properly farmed, and they will justifiably hope to make up these arrears when prices improve. These arrears, however, will be excessive inasmuch as they assume that the farmers should have paid high rentals all during the depression years.

The protracted period during which low values have obtained has raised many farmers' debts to such a level that no representations on the part of the landlords will ever secure payment in full, and there is grave danger that the consciousness of being irremediably in debt will destroy the confidence of these farmers and make them from year to year less progressive in their agricultural work. This process is already well under way, and there can be no doubt that to-day many farmers of North-east and North Siam who raise rice only for their own food are more economic in their practices, more careful of their equipment, and more energetic in their work than those farmers of Central Siam on whom the nation depends for the bulk of its revenue. If the process continues these farmers may some day become wards of the government instead of the sources of the government's income. In other chapters we have seen that the commercialized farmers of Central Siam have for the past few years been facing worse problems than their brethren of the self-sufficing areas. Many of these problems are difficult of solution, but this problem of increasing indebtedness due to land rental demands which are not equated with the economic productivity of the land is both importance and open to relatively simple investigation and treatment.

All land rental contracts in the intensively irrigated regions should be investigated, and an attempt should be made to equate these demands with the available figures on rice production and values per rai of land, in each region, for the past five years. High debts which are the result of accumulated demands in these years should then be scaled down proportionately as it seems the demands have been excessive.

The national government has already taken steps in this direction, insofar as it may be regarded as a landlord, by reducing land taxes in many regions as a result of poor crops, low prices, and other factors. Although it has been possible to equate the land tax with productivity only roughly, the situation is far better than it would have been if the government had attempted to apply the land tax demands of 2472, for instance, to 2476.

The process needs to be carried farther, and it very seriously needs to be applied to land rentals. It is to be hoped that the Bangkok landlords themselves will unite in an attempt to face the situation, as their efforts can solve the problem better and more amicably than the intervention of the national government.

DEBT AND LOAN DECREASE: REPAYMENTS AND FORECLOSURES.

Significant detail on the repayments of debts and loans which took place during 2476 is given in Tables XXX and XXXI at the end of this chapter. The divisional averages are as follows:

DIVISION	DEBT DECREASES		LOAN DECREASES	
	Cash and Commodity Repayments	Foreclosure and Other	Cash and Commodity Repayments	Foreclosure and Other
North-east	0.55	..	0.25	..
South	0.88	0.51	2.32	..
North	1.04	..	2.56	0.37
Center	23.63	11.73	9.88	9.55

It is apparent that voluntary repayments in cash or commodities on outstanding indebtedness amounted to about two thirds of

the amount newly borrowed in 2476.⁽¹⁾ Repayments on the farmers' loans were greater than the amounts which they actually loaned out during 2476.

We notice also that foreclosures were of no importance in 2476 save in the Central Division where they amounted to about 50% of the voluntary repayments on debts, and nearly 100% of the voluntary repayments on loans.

In spite of these high figures for foreclosures it appears that debts are not very frequently cancelled by foreclosure. Examination of the schedules shows that the reductions by foreclosure took place in a very small number of cases only, and that these were for loans or debts of high amounts which had been long outstanding and on which little if any interest had been paid. Low prices for crops made it undesirable for landlords to foreclose on secured land holdings in general.

A part of these foreclosures, also, consisted in fact of unredeemed pawned gold and silver ornaments. In the countryside where pawnshops are not to be found, it sometimes happens that a man borrows money on his wife's gold necklace or bracelet and turns the security over to his creditor: the creditor or his wife enjoy the use of the bracelet in lieu of interest and if, after a time, the debtor says he will be unable to pay off his debt, the necklace or whatever it may be is considered to belong to the creditor. Such transactions were listed as foreclosures in this analysis.

Land foreclosures in Central Siam were of some importance in a few regions, but it is likely that they took place almost wholly in the case of debtors who had shown no signs of making energetic attempts to make full use of the land involved or to pay off their debts.

LOANS: THE SUMS WHICH ARE OWED TO AVERAGE SIAMESE HOUSEHOLDS BY OTHERS.

We have already had occasion to refer to the loans in a number of places where information concerning them made it possible to

(1) Compare these figures with those of Table XXVII or with those in the summary immediately preceding this one in the text.

consider the debt situation to better advantage. In themselves they are of considerable interest as they present the opposite side of the debt situation.

It will be remembered that we had occasion, early in this chapter, to consider an imaginary example in which we discussed the situation which would obtain if each of one million households in Siam were to loan one hundred Baht to one of one million others. In that case the situation would concern two million households,—roughly the population of the nation,—and we would say that the debt of the average Siamese household was fifty Baht and that the loan of the average household was also fifty Baht. If we possessed only the latter information we would know that, even though we could not say how many households were actually in debt and how many actually had loans, that the indebtedness of the Siamese population was entirely absorbed within the same population,—that the group of families under consideration was not in debt, as a group, to any other group of people anywhere.

The information concerning loans is of value in just this sense: by comparison with the data on debts it tells us which communities are in debt to others, and which communities are creditors of other regions.

Detailed information concerning the loans is given in Tables XXXII at the end of this chapter. The divisional averages are as follows, with the figures for average debts in parentheses:

DIVISION	END OF 2475		END OF 2476	
	Loans	(Debts)	Loans	(Debts)
North-east	8.18	(5.96)	8.55	(6.77)
South	9.11	(6.48)	7.32	(9.59)
North	16.97	(14.66)	14.54	(17.16)
Center	230.46	(231.45)	215.43	(233.82)

We see at once that the situation as regards loans is approximately the same as that regarding debts. When we consider Siam by large areas, we find that loans are big where debts are big and vice versa.

No one major rural area of Siam, as a whole, is in debt to any other area; and since the households studied by the Survey were nearly all farm families we can say that the Siamese farmer who is in debt has in general borrowed from another Siamese farmer.

The remarks which were made with regard to indebtedness in the four major areas of Siam apply with equal force to the divisional data on loans. In studying the regional data on loans we will wish to compare them constantly with the regional data on debts, and this comparison will be facilitated by computation of a figure known as "net indebtedness".

Net Indebtedness. By "Net Indebtedness" we mean the amount of indebtedness which remains after we have subtracted average loans from average debts. It is clear that the individual who owes another ten Ticals, but has loaned to someone else eight Ticals, is actually indebted only to the extent of two Ticals. In actual practice it does not often happen that the man who is in debt also has outstanding loans, but when we study a group of households as a whole we often find that the loans of a few households balance the debts of the others. In our imaginary example of a preceding page we assumed two million families with average loans of fifty Baht and average debts of fifty Baht: our computation of net indebtedness for the average household of the group would then be as follows:

Average debts	...	...	Baht 50.00
Average loans	...	...	Baht 50.00 (Subtracted)
Net Indebtedness	...	...	<u>00.00</u>

If the average loans of a community are bigger than its average debts, our figure for net indebtedness becomes a negative quantity and we conclude that that community as a whole is in the position of a creditor towards other regions which have borrowed from it. To make this operation even more clear let us follow it through in the case of two communities actually studied by the Survey.

For the village near Ayuthia we find:

AYUTHIA	{	Average debts at end of 2476	...	...	Baht 282.10
		Average loans at end of 2476	...	...	Baht 96.00
		Net indebtedness	...	...	<u>Baht 186.10</u>

In other words, although the indebtedness of the average family in this community is Baht 282.10, we can say that on the average Baht 96.00 of this amount is owed to householders in the same community and the balance, Baht 186.10, the net indebtedness, represents the amount of the average debt which is owed to creditors outside the community.

For the village near Nontaburi we find:

NONTABURI	{	Average debts at end of 2476	...	Baht 563.21
		Average loans at end of 2476	...	Baht 1,311.20
		Net Indebtedness	... ..	Baht -747.99

The negative indebtedness turns out to be a negative quantity and we can state that, although average debts are at the high figure of Baht 563.21, this indebtedness has been entirely absorbed by the rich families of the community who have, in addition, loaned out an average of Baht 747.99 to debtors in other communities. The average loans in this case are 232.81% of the debts,—they are over twice as large as the debts even though the debts themselves are high.

The two communities here used as examples represent the two extremes of net indebtedness as found by the Survey. All other communities lie between these extremes of 186.10 in Ayuthia and -747.99 in Nontaburi. The divisional data show the following results:

DIVISION	NET INDEBTEDNESS			
	End of 2475	End of 2476	CHANGE DURING 2476	
			Increase	Reduction
North-east	-0.22	-1.78	..	1.56
South	-2.63	2.27	4.90	..
North	-2.81	2.62	4.93	..
Center	0.99	18.39	17.40	..

These are the same figures which we calculated mentally when we first began to consider the loans and to compare them with the

debts. Using these figures we see at a glance that, at the end of 2475, the three self-sufficing areas of North-east, South, and North Siam had more outstanding loans in the communities studied than they had debts. At the end of 2476 North-east Siam was the only area in which the sample villages still had more loans than debts and, in them, the loans had come to overbalance the debts still more than at the beginning of the year: net indebtedness had decreased.

Regional data are given in Tables XXXIII at the end of this chapter.

Net Indebtedness in the North-east. The communities studied in the North-east were all, with the exception of those near Nagor Rajasima and Khukan, more well-to-do than surrounding districts. In them all, however,—with the exception of the Nongkai village and, insignificantly, that near Sakolnagor,—net indebtedness increased during 2476. That is, these communities were in a position of some preeminence among their neighbors at the beginning of 2476 and were the centers to which needy farmers from the more sparsely settled surrounding countryside came to borrow funds. During the year this priority diminished somewhat, and we conclude that funds available for investment were not to be found in the larger country villages during the year. The community near Nongkai, on the other hand, consists largely of well-to-do farmers, craftsmen, and traders whose proximity to the most important markets of the province enabled them to remain financially secure during the depression years. Funds were available for investment in this community and, during 2476, were loaned out to so great an extent that the average for all nine villages studied in the North-east was affected.

Net Indebtedness in the South. Most of the Southern communities studied were richer than the surrounding countryside and had more loans outstanding than debts both at the beginning and at the end of 2476. During the years this priority was diminished a good deal in all communities save that near Surat. Had it not been for an exceptional large debt incurred by a single individual of Jumbor for medical expenses that community would not have shown so great an increase in net indebtedness but would have been at the end of 2476 in approximately the same situation as at the beginning.

Net Indebtedness in the North. The villages studied near San Mahapon, Na Kuam, Chiengrai, Chiengsen, and Laplae were all in a position of preeminence at the beginning of the year but all of them except Chiengrai lost this priority in part or in whole during the year. The formerly rich fruit village near Laplae, from being a significant creditor village, became a significant debtor village: the borrowed funds probably came from Amphur Laplae itself or from Utaradit.

The net indebtedness of the other Northern villages increased during the year except in the Lampun community where debts were partially paid off and new loans were made.

Net Indebtedness in the Center. All of the communities studied in the Center were in debt to bigger market centers at the beginning of 2476 with the exception of those near Nontaburi and Dhanyaburi. In most of them, however, net indebtedness decreased during the year as a result of substantial repayments on outstanding debts and of new loans arranged during the year.

Net indebtedness increased significantly in the Chaxerngsao district as a result of new debts,—money borrowed and goods bought on credit,—necessitated by a heavy deficit incurred on the year's operations. In the Supanburi community a number of outstanding loans were wiped out during the year by farmers who foreclosed on land security, and this resulted in an increase in net indebtedness.

The big increase in net indebtedness in Nontaburi is an indication that, although the village still has the lowest net indebtedness of any studied by the Survey, the adverse influences bearing on the pottery business are likely to cut seriously into the wealth of the community if long continued. The net indebtedness increase in the Bangkok region is the result of continued borrowing and of goods bought on credit: the loans situation scarcely changed at all during the year.

Net Indebtedness in Chantabun. Although the debts of the Ta Mai village are high, we find that the loans are still higher. Thus, although the pepper-planter of Ta Mai is indebted to middlemen-shopkeepers and his economic relationships with these traders are not good, he has nonetheless become considerably richer than the rice and

fruit farmers of the lowlands surrounding the plateau and has been able, in time past, to lend them considerable amounts of money. During the year 2476 this situation changed significantly and net indebtedness increased. The reasons for this have been discussed in the Chapter on Farming.

The net indebtedness of Klong Naraya to the bigger market centers increased during 2476, but this was due to considerable repayments received on outstanding loans and not to new borrowing.

SUMMARY OF AGRICULTURAL CREDIT IN SIAM.

We have now concluded our discussion of the data on agricultural credit collected by the Second Survey, and are in a position to recapitulate our findings.

Credit is extended,—debts are contracted,—almost wholly between individual Siamese farmers. These are usually related to each other in the regions where not many or large contracts are made, and are often related to each other even in the commercialized agricultural areas. When this is not the case the farmers are usually friends and neighbors, and the contracts made partake of the same nature as those between relatives. Agreements of this sort often include no demands for interest payments and may be regarded as friendly arrangements by which one man who has plenty lends to someone else, without expectation of gain, his surplus. The man who borrows wishes to return the good faith shown him by his neighbor, and pays interest if he is able to even though this may not be demanded of him.

In the more commercialized areas the debts are for larger sums, and written agreements containing arrangements for interest and security are more often used.

The young or poor farmer of the North-east, South, North, or South-east usually needs to borrow little money. Land values are in general low, and in many districts he is able to obtain land simply by squatting on public land and clearing it of trees. His farming equipment and house are made by his own hands,—he need only buy nails as his well-established neighbors will lend him the tools. He needs farm animals, and he must pay his head tax: perhaps he needs

to borrow enough rice to see him through to his first harvest. For these purposes he can borrow a small sum of from five to fifty Baht from a relative or friend in one of the long settled farming villages: his only security need be a good reputation.

In times when rice prices and the crops are good, every community which is able to support a monastery and temple contains many households who can well afford to lend to new-comers and to younger members of the community who wish to set up establishments of their own outside the village or in an unsettled region where they believe they will be able to grow good crops. When, as in the past few years, the prices for rice are low and incomes are cut down, it is only the villages which are big enough to support good markets and which maintain their incomes by extensive trading which can still find the funds to lend the needy.

When depressed values for rice obtain for a number of years in succession all the villages feel the effects of it and, ultimately, it is only the well established merchants and craftsmen in the biggest towns,—such as the Changvad centers,—who can still afford to lend money.

This is the situation which obtains largely to-day in North-eastern, Southern, Northern, and South-eastern Siam.

In the commercialized areas of intensive rice cultivation the situation is somewhat different because larger amounts of credit are needed by individual farmers, and more of the farmers must borrow in order to establish themselves on a sound basis. The reason for this is that commercialization results in higher land values and in the practice of buying, rather than creating, a large part of the farming and household equipment and supplies. This commercialization strengthens the contrast between farming communities, market centers, and villages which specialize in the production of pottery or other objects which the area as a whole buys.

At the end of 2475 the relationships between the typical farming communities and the others were approximately the same as those found in the self-sufficing areas. Credit could no longer be obtained in most of the farming villages as surplus funds had largely been used up, and the farmers had to go to big market or handicraft

centers to borrow. The rice crop of 2475 was the second most abundant in Siamese history, and this fact was reflected in general improvement in the agricultural regions. During 2476 the credit situation fluctuated considerably: in some districts conditions continued to retrogress but in many significant improvements took place. A considerable amount of outstanding credit was paid off and by the end of 2476 the average farmer of Central Siam was probably a little better off on the credit situation than he had been at the beginning.

Outstanding dangers to agricultural credit appear to be found not so much in excessive interest demands or unfair treatment of the farmers by Chinese moneylenders and middlemen as in the uneconomic practices of a number of regions where the technique of financial transactions has not kept pace with commercialization, and in land rental demands in the intensively irrigated districts.

The Chinese have been found by this Survey to be primarily business men and, very secondarily, creditors. The Chinese appears to prefer business transactions on a strictly cash basis: he does, however, sell goods on credit in regions where this practice is well established, and he sometimes lends money when the farmer is well known to him and cannot obtain funds elsewhere. If the farmer is of good reputation he is allowed to borrow from the Chinese at interest rates well below the legal limit and, even in a number of cases where it was very evident that the farmer was not a man of good reputation, the interest rates were still below the legal limit. The Siamese farmer, and especially his wife, is much more given to money-lending with the hope of high profits than is the Chinese. When he does lend money, the Chinese is business like about it and insists on a written contract, security, and interest, but he does not ask for illegal rates of interest as often as the Siamese. On the other hand, both Chinese and Siamese often lend to close friends and relatives without asking for any interest at all. The data collected by the Survey on this point is very definite, and it cannot be argued that the reason Chinese were not found to be asking high interest rates was due to the methods of the Survey: information was collected on this point from the debtors, and not from Chinese creditors who might be suspected of falsifying their statements. The investigators were

well aware of the various means which are said to be practised by Chinese in evading the legal interest rates and overlooked no opportunity to find them. In all debts particular care was taken to find out whether or not the farmer had actually received the full cash amount of his debt in the first place.

The Chinese paddy-dealers and buyers probably do, on some occasions, make more than a strictly legitimate profit on their transactions; but it must be remembered that their business calls for very hard labor in transporting the paddy and requires an ability to quote prices, without recent knowledge of Bangkok rice values, which will meet competition on the part of other middlemen and still leave them a profit. It is inevitable that such transactions should sometimes result in more than a fair gain, but such occurrences appear not to be very frequent and it was found, in a number of cases, that the farmer had beat the middleman. A farmer who has dealt for some years with the same paddy buyer often borrows rice for food from the buyer at a time when prices are high and pays it back without interest after harvest when prices are lower.

In a number of market regions,—of which Amphur Ta Mai in Chantabun is a good example,—the farmers try to beat the traders in the planting season by getting excessive advance of supplies on credit. Later, the traders try to beat the farmers by collecting more than a fair share of their crops in payment. Both farmers and middlemen, thus, are parties to a system which results in frequent losses to individuals on both sides of the picture, and in equally frequent individual gains. If a farmer gets many goods on credit and then fails to work his land with energy the crop is small, the trader loses, and the farmer is landed with a debt which he will make no serious effort to repay as long as he can find another trader who will give him credit. If he finds such another trader, the latter knows that he is taking a big chance and determines to advance as little as possible, to try and make sure that the farmer works his land, and to collect as much of the crop as possible.

The farmer of really good reputation can avoid the dangers of this system by borrowing cash or paddy from friends to pay for his supplies at the time he gets them. In this way the trader has

no claim whatsoever on his crops. In the past few years some farmers of good reputation have borrowed actual cash from individual traders in order that they might be able to pay cash for supplies. In such cases the farmer has to pay interest, but he is not in the position of having to buy supplies on credit at excessive prices.

An energetic and progressive farmer can avoid nearly all the dangers which lie in these practices; a lazy or spendthrift farmer goes heavily into debt at the expense of the trader; and the trader recoups the losses which he has made on bad customers by making more than a fair profit on those farmers who are neither notably lazy nor notably energetic, and who accept the goods-on-credit system as the easiest way out in a year when returns from crops are poor.

Many land rental demands in the intensively irrigated districts of Central Siam are based on years when both crops and prices are good: these are unduly high for years when prices are low, and result in a great cumulative indebtedness which, probably, will never be paid off in full. The rentals should be investigated and equated for each year and each district with the crop returns per rai of land. Land rentals in future should be made out a-new for each year in accordance with this principle.

Total Siamese Agricultural Debt. The First Survey estimated the total farm indebtedness of the nation at one hundred and forty three million Baht. This estimated was frankly put forward as no more than an attempt to guess at the actual indebtedness on the basis of the Survey's data. Estimates of this sort, and the methods by which they are computed, are always open to strong criticism; but they are of value insofar as they make it possible to think of the situation as a whole. If we treat the data of the Second Survey in the same way as those of the First Survey were treated and use the same figures for population, we arrive at a total farm indebtedness figure for 2476 of one hundred and fifty four million Baht.⁽¹⁾

Neither of these figures could stand strong attack, but per-

(1) See page 203 of the First Survey's report.

haps they tell us something more than divisional and regional averages.

There are a number of reasons for believing that the figure is too high, especially as it bears on Central Siam. The First Survey included South-east Siam in the average for the Center, and it is almost certain that, in spite of the relatively high debts in Klong Naraya and Amphur Ta Mai, the actual average for South-east Siam as a whole is far below the average for Central Siam. It is also certain that the average for the eleven communities studied in Central Siam gives a higher divisional figure than would be obtained if the number of villages studied had been large enough to include those amphurs of the outlying Central Changvads which consist of hilly country above the level of the rice-growing Menam plains.

These various factors cannot be mathematically appraised, but we can make the following statements with regard to the agricultural debt of Siam with the assurance that they are open to very little if any doubt:

1. The total agricultural debt of Siam, at the end of B. E. 2476, was somewhat in excess of one hundred million Baht and was certainly not higher than one hundred and fifty million Baht.

2. The agricultural debt at the end of 2476 was roughly 10% higher than it had been at the end of 2473, and only very slightly if at all higher than it had been at the end of 2475.

3. About 80% of the total indebtedness is concentrated in the lower Menam valley of Central Siam and, within this area is highest in the regions of intensive irrigation.

4. About 20% of the total indebtedness is divided among the other areas of Siam, probably in the following way:—North Siam 8%, North-east Siam 7%,⁽¹⁾ South Siam 3%, and South-east Siam 2%.

5. During 2476 indebtedness in Central Siam did not change very much one way or the other: increases due to onerous land

(1) Although average debts are much higher in North Siam than in the North-east, the population of the North-east is nearly twice as large as that of the North.

rentals were balanced by a few foreclosures and fairly extensive voluntary repayments on old debts.

6. During 2476 indebtedness in the other areas did increase appreciably, but the individual amounts borrowed were almost all small.

7. The greater part of the farm debt of Central Siam is not harmful. Most of the contracts are between relatives and friends, interest demands rarely exceed the legal limit of 15%, and in most cases are not considered cumulative if unpaid. Foreclosures take place, but show no signs of becoming a serious menace to the average farmer of good reputation. The most harmful part in this farm debt is that part of it which consists of accumulated unpaid land rentals which, apparently, are excessive in the intensively irrigated districts.

8. The farm debt of North-east, South, North, and South-east Siam is entirely harmless and free of any dangers to the farmers of the Kingdom. Contracts are almost wholly between relative and neighbors, amounts borrowed are small, interest payments are often not demanded and, even if demanded, they are not considered as cumulative if unpaid. In a very few districts of the North-east, however, debts are slowly increasing as a result of taxes which the people cannot today pay.

9. The general impression that traders and middlemen use credit as a means of "oppressing" the farmers is in most cases unjustified, and it is caused by the fact that it is chiefly farmers of bad personal reputation who borrow from the traders. They are unable to borrow from their relatives and neighbors because of their reputations. The farmers in such a case usually try to get more from the traders than he will be able to repay, and the trader justifies the risk which he is taking by trying to exact more than a fair profit. Such cases result in acrimonious disputes and litigation, and are therefore brought to public attention.

THE COOPERATIVE SOCIETIES: THE AGRICULTURAL CREDIT OF THE FUTURE.

In the introduction to this chapter we discussed the various

way of meeting the financial needs of farmers in countries of different degrees of development in order that we might consider what arrangements seem best suited to the agricultural population of Siam.

Our examination of the farm debt of Siam has shown us that it is almost wholly a "family matter",—one which is solved by personal contracts between lenders and borrowers who are related to each other or who are neighbors. We have seen that, in most parts of Siam, the debt is so small that it can well be left in the condition in which it now is: there would be no advantage at all in introducing formal credit facilities to regions where credit is not greatly needed or used.

Wherever agriculture has become commercialized, however, the debts are larger and there exists the probability that they will become still larger as the process of increasing commercialization goes on. Even in this regions, however, the debts today are not very serious and do not call for heroic treatment.⁽¹⁾ The Siamese Government has already foreseen the desirability of encouraging more business like methods in these regions by initiating a formal credit system,—the Cooperative Societies. In the eighteen years of their existence the Cooperative Societies have expanded slowly but gradually in the regions where they are most needed and, at the end of 2476, had taken over about 2% of the total farm debt of the nation. The present government has shown its appreciation of the valuable services performed by the Societies by continuing to grant them funds which will make possible their continued expansion. It is to be hoped that their success will not be endangered by credit advances, under their name, to any other than farmers for whom the Societies were designed, and that a period of ten or fifteen years will find them strongly entrenched in the land. When this happens it will be found that they no longer need depended on advances from

(1) The suggestion, which is sometimes heard, that the government should step in and pay off all these farmers' debts need not even be considered. Supposing such an operation to be within the bounds of financial possibility, it would have only the most disastrous effects on the farmers and on the nation and, in addition, the debts would rise again to the 2476 level within a very few years. Such suggestions deserve only the most complete oblivion.

the government but will become self-supporting with their capital derived from the farmers themselves.

The criticisms most often levelled at the Cooperative Societies are, first, that they turn the farmers into moneylenders by loaning them funds at low interest rates which the farmers can then loan to others at higher rates, and, second, that their expansion has not proceeded far enough to make them of any great service to the farming population as a whole. These criticisms seem to be quite unfounded: let us examine them.

(1) The funds loaned by the Societies to individual members are too small for them to be used in money-lending operations, the use to which the funds are put is closely supervised by the Bangkok inspector who oversees each society, and the difficulty of collecting illegal interest demands makes it impossible for a society member to become a profiteering moneylender without running the risk of finding himself unable to pay even the lower interest rate which he owes to the society.

The funds loaned by the society to its members fall into two categories: those larger sums which are to be used for capital expenditure such as the buying of land and repaying of old debts, and the smaller sums which are to be used for buying cattle, equipment, and the like. The larger sums cannot be diverted from the use to which they are pledged by the borrower: in many cases he never actually handles them as the society inspector sees that the land is bought or the old debt paid off and insists on a proper receipt from the former landowner or creditor. The smaller sums borrowed for the purchase of cattle or equipment average less than fifty Baht, and it is sufficiently plain that a capital of fifty Baht does not permit a farmer to give over agriculture and become a moneylender.

We may safely conclude that there is no truth in the first criticism, and that the Cooperative Societies do not make it possible for farmers to become moneylenders.

(2) The rate of expansion of the Societies, up to the present time, is determined by the capital funds made available by the Siamese Government for this purpose. It is not yet possible for the Societies to raise their own capital from farmers: this will not

happen until the societies are so widespread that most of the farmers, whether members or not, are aware of the services which the societies perform, know them to be on a secure financial basis, and realize that they are as suitable for farmers' investments as for farmers' loans. The Cooperative Societies have expanded as far as they could with the funds dedicated to this purpose by the Government. If faster expansion is desired, the Government must appropriate more funds to this purpose.

Expansion of the Cooperative Societies is limited, also, by the need for adequately trained men to handle the book-keeping and supervision of the societies. Siamese farmers in general are not yet capable of running their own societies without technical assistance and advice. Continued slow expansion of the societies will gradually show the farmers how credit arrangements must be handled, and a day will doubtless come when they will be able to organize and operate their own societies with a minimum of technical assistance and advice.

The Bangkok office of the Cooperative Societies is severely handicapped by the lack of a sufficient number of trained and energetic men, and of adequate office facilities and machinery. The amount of book-keeping which becomes necessary in supervising the loans, security, and interest payments of several hundred societies calls for far greater facilities than are available. If the nation wishes to see a faster expansion of the Societies it is of the first importance that attention should be given the office force and machinery of the Bangkok headquarters. The funds which have been made available by the Government for new societies do not provide for increased office assistants and machinery, and it is highly important that the Societies should not be allowed to develop so fast that adequate control might no longer be practised.

The dangers which face the Cooperative Societies are for the most part concerned with just this possibility: that expansion might proceed faster than the development of energetic trained men willing and able to perform the hard work of supervising them.

Another great danger is that the present exaggerated pre-occupation with labor problems in Bangkok might lead to a sentiment

in favor of forming cooperative credit societies for non-farmers under the same organization and financial set-up which now handles the farmers' cooperative societies. It must be remembered that the success of the societies is determined by the extent to which the personal reliability of members can be assured, and that this is best assured when all members of a given society are in close daily contact with each other. These conditions are not found in a laboring population as a rule: the laborers are in close contact with each other, if at all, only during the hours of their work. Frequently, one laborer does not even know where another lives and it would be quite impossible for members of a laborers' cooperative credit society to assume responsibility for each other's debts. Experience in other countries has shown that even farmers' cooperative societies are not successful in regions where the members are not in intimate daily contact with each other, and it is quite certain that any cooperative credit society formed for a laboring class in Bangkok would fail. If such a society were affiliated with the agricultural credit societies, the Cooperative Movement as is affected farmers would be seriously endangered.

If sentiment in favor of cooperative credit societies for Bangkok laborers or taxi-drivers is sufficiently strong, one such society might be started by the persons responsible for the sentiment; but the Government would be ill-advised to advance much money for it as it would undoubtedly fail. It would be decidedly unfair and extremely dangerous to put the responsibility for such a risky experiment on the shoulders of the central office of the agricultural Cooperative Societies. Since the laboring class in Bangkok is a small one, it would be far wiser to defer such experimentation entirely until the credit of the farmers, who probably form over 90% of the Siamese population, is completely assured.

The services performed by the Cooperative Societies today are great, and there can be little doubt that the greatest service is that of educating the farmers and bringing to them the knowledge of new agricultural techniques and the like.

The members of the Second Survey had the privilege of seeing the books and meeting the members of three societies in

Lopburi. One of these was a society which was in a very sound financial condition, another was classed as intermediate, and the third was rated as relatively unsuccessful. The books of these societies were kept by the members themselves under the supervision of the local inspector, they were carefully made out in the handwriting of the three farmers who served as secretaries, and showed an ability to learn and practise sound accounting technique.

The ultimate value to the nation of this form of practical education can scarcely be over estimated. We have already seen that most of the difficulties which confront the Siamese farmers are the result of their own slowness to learn new methods and their disinclination to approach their economic problems in any energetic or business like way. Such a situation cannot be handled by ordinary educational facilities: schoolboys can be taught to add, but school education cannot make them apply their learning to everyday problems so long as they know that their families and all their neighbors handle their farm transactions without benefit of written documents or precision. By bringing adult farmers into close knowledge of the economic transactions of their neighbors, by obliging them to consider and discuss these transactions, and by showing them better ways to handle the economic situation, the Cooperative Societies are performing an invaluable educational service in the way in which it will be of most practical benefit. It will be many years before the lessons taught in the schools will have any great weight with the adult farmers of Siam: the educational effects of the Cooperative Societies are felt at once in the communities where the societies are established.

As time goes on, it is to be hoped that the research into improved agricultural techniques and new crops performed by trained agriculturalists will point the way to practical and general improvement in the farming methods of the nation. This research will have been futile if there is no way of bringing the farmer to use it. The schools cannot teach these things: an adult farmer will not take suggestion from his son on how to grow his rice, and by the time the schoolboy is himself full grown he is committed to the ways of his fathers and has forgotten what he learned in the schools. The

Cooperative Societies can perform this service, and have already done so in a number of small ways. An inspector who has gained the confidence of the members of a society can readily induce them to try a new experiment in farming on a very small scale. If the experiment is a success all the members know it because they have all taken a part in its inception, and the successful experiment becomes a part of the general farming practice of these members. From them it spreads to the community with little delay.

The specific services of the Cooperative Societies need scarcely be mentioned as they are well known. They have enabled a considerable number of farmers to rid themselves of onerous debts of long standing and to substitute for them debts with lower interest demands and a system of gradual repayment which will allow them ultimately to be paid off in full. They have made it possible for many farmers to buy land and avoid too heavy land rental demands. They have enabled many peasant to buy equipment which will increase their productivity and which, otherwise, they would have had to go without.

The Cooperative Movement in Siam is one of the most valuable factors in the economic situation of the Kingdom. It can and gradually will transform the Siamese farmer from a simple and unprogressive peasant who practises age-old methods to derive a bare subsistence from the soil into a progressive agriculturalist able and anxious to make full use of the improved methods of cultivation and commerce which industrial civilization has brought to the world.

We may safely conclude that, just as there is no great seriousness in the agricultural debt of Siam, so also the agricultural credit of the future has been established on a sound basis which will perform far more for the nation than the simple extension of credit which is needed.

TABLE XXIII. A.

Debts⁽¹⁾ outstanding at the end of B. E. 2475 and B. E. 2476
net increase or reduction during 2476, and number of families
with debts at end of B. E. 2476.

NORTH-EAST SIAM.

REGION	2475 Debts	2476 Debts	Percentage which 2476 debts are of 2475 Debts	NET AVERAGE		Number of families with debts end 2476
				Incr.	Red'n.	
Nongkai	1.30 ⁽²⁾	0.88	.. ⁽³⁾	..	0.43	2
Udon	0.44	0.69	..	0.25	..	3
Khonkaen	0.06	0.72	..	0.66	..	4
Pu Vieng	0.25	1.48	..	1.23	..	6
Sakolnagor	0.30	..	..	..	0.30	..
Ubol	1.09	2.28	..	1.19	..	8
Khukan	0.45	2.48	..	2.03	..	21
Nag. Rajasima	43.83	45.65	104.15%	1.62	..	19
Average North-east	5.96	6.77	113.59%	0.81	..	63
Percentage of all North-eastern families with debts						19.69%

(1) The word "debts" indicates amounts borrowed by the farmers of this study,—amounts which they have contracted to repay to others.

(2) All figures are averages in Baht: Satang per household.

(3) This percentage was not computed in those cases where the average indebtedness was so small that the percentage could serve no useful purpose.

TABLE XXIII. B.

Debts⁽¹⁾ outstanding at the end of B. E. 2475 and B. E. 2476
net increase or reduction during 2476, and number of families
with debts at end of B. E. 2476.

SOUTH SIAM.

REGION	2475 Debts	2476 Debts	Percentage which 2476 debts are of 2475 debts	NET AVERAGE		Number of families with debts end 2476
				Incr.	Red'n.	
Naradhivas	6.25	7.45	119.20%	1.20	..	6
Pattani	0.14	2.96	..	2.82	..	7
Songkla	4.13	5.38	..	1.25	..	6
Trang	1.53	2.76	..	1.23	..	9
Nag. Sridhamaraj ..	5.00	5.75	115.00%	0.75	..	9
Surat	2.75	4.38	..	1.63	..	4
Jumbor	25.59	38.45	150.25%	12.86	..	11
Average South	6.48	9.59	147.99%	3.11	..	52
Percentage of all Southern families with debts						18.67%

(1) See footnotes to preceding Table A.

TABLE XXIII. C.

Debts⁽¹⁾ outstanding at the end of B. E. 2475 and B. E. 2476
net increase or reduction during 2476, and number of families
with debts at end of B. E. 2476.

NORTH SIAM.

REGION	2475 Debts	2476 Debts	Percentage which 2476 debts are of 2475 debts	NET AVERAGE		Number of families with debts end 2476
				Incr.	Red'n.	
Chang Puak (Chiengmai)	5.40	6.55	121.30%	1.15	..	5
Mae Hiah (Chiengmai)	30.19	31.88	105.60%	1.69	..	22
San Mahapon (Chiengmai)	28.48	28.73	100.88%	0.25	..	10
Lampun	9.73	9.60	98.77%	..	0.12	9
Na Kuan (Lampang)	5.50	..	..	..	5.50	0
Ban Sadej (Lampang)	1.01	1.11	..	0.10	..	5
Chiengrai	11.25	11.25	100.00%	..	..	1
Chiengsen .. ..	..	0.17	..	0.17	..	2
Pa Daeng (Prac)	4.65	5.20	..	0.55	..	7
Mae Kaml (Prac)	0.80	1.38	..	0.58	..	4
Lapise	64.25	92.85	144.51%	28.60	..	12
Average North	14.66	17.16	117.05%	2.60	..	77
Percentage of all Northern families with debts						17.50%

(1) See footnotes to preceding Table A.

TABLE XXIII. D.

Debts⁽¹⁾ outstanding at the end of B. E. 2475 and B. E. 2476
net increase or reduction during 2476, and number of families
with debts at end of B. E. 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	2475 Debts	2476 Debts	Percentage which 2476 debts are of 2475 debts	NET AVERAGE		Number of families with debts end 2476
				Incr.	Red'n.	
Bangkok	150.65	181.21	120.29%	30.56	..	77/156 ⁽²⁾
Nontaburi	524.90	563.21	107.30%	38.31	..	24
Chaxerngsao	85.08	139.08	163.47%	54.00	..	30
Dhanyaburi	253.68	232.83	91.78%	..	20.85	27
Ayuthia	321.00	282.10	87.88%	..	38.90	31
Lopburi	198.25	201.88	101.83%	3.63	..	17
Saraburi	359.11	296.68	82.62%	..	62.43	27
Supanburi	237.53	267.95	112.81%	30.42	..	27
Uthai Dhani	172.50	172.09	99.76%	..	0.41	29
Pitsanulok	109.91	93.06	84.67%	..	16.85	27
Bejraburi	133.38	141.93	106.41%	8.55	..	25
Average Central	231.45	233.82	101.02%	2.37	..	342
Percentage of all Central families with debts						61.51%
CHANTABUN						
Ta Mai	166.97	241.39	144.57%	74.42	..	21
Klong Naraya	73.70	70.94	96.26%	..	2.76	24

(1) See footnotes to preceding Table A.

(2) 156 families were studied in the village near Bangkok: 77 of these had debts at the end of B. E. 2476.

TABLE XXIV. A.

Percentage of debts and loans outstanding at the end of
B. E. 2476 with related creditors and debtors.

NORTH-EAST SIAM.

REGION	DEBTS		LOANS	
	Relatives	Non-relatives	Relatives	Non-relatives
Nongkai	Unknown		16.88%	83.12%
Udon	100.00%	..	16.67%	83.33%
Khonkaen	97.64%	2.36%	Unknown	
Pu Vieng	100.00%	..	Unknown	
Sakonagor	No debts		Unknown	
Ubol	100.00%	..	Unknown	
Khukan	98.26%	1.74%	No loans	
Nag. Rajasima	65.08%	34.92%	Unknown	
Average North-east	72.94%	27.06%	16.86%	83.12%

Data on the relationship of debtors and creditors were not collected in all cases. Percentages were computed only for those regions where the information collected appeared to be adequate for the purpose.

TABLE XXIV. B.

Percentage of debts and loans outstanding at the end of
B. E. 2476 with related creditors and debtors.

SOUTH SIAM.

REGION	DEBTS		LOANS	
	Relatives	Non-relatives	Relatives	Non-relatives
Naradhivas	98.94%	1.06%	52.38%	47.62%
Pattani	99.40%	0.60%	66.67%	33.33%
Songkla	74.36%	25.64%	100.00%	..
Trang	89.04%	10.96%	Unknown	
Nag. Sridhamaraj	100.00%	..	100.00%	..
Surat	100.00%	..	Unknown	
Jumbor	66.76%	33.24%	No loans	
Average South	84.38%	15.62%	70.15%	29.85%

TABLE XXIV. C.

Percentage of debts and loans outstanding at the end of
B. E. 2476 with related creditors and debtors.

NORTH SIAM.

REGION	DEBTS		LOANS	
	Relatives	Non-relatives	Relatives	Non-relatives
Chang Puak (Chiengmai) .. ..	..	100.00%	Unknown	
Mae Hiah (Chiengmai)	0.48%	99.52%	100.00%	..
San Mahapon (Chiengmai)	17.73%	82.27%	4.60%	95.40%
Lampun	7.25%	92.75%	Unknown	
Na Kuam (Lampang)	No debts		Unknown	
Ban Sadej (Lampang)	18.60%	81.40%	Unknown	
Chiengrai	Unknown		Unknown	
Chiengsen	5.19%	94.81%	100.00%	..
Pa Daeng (Prae)	100.00%	..	No loans	
Mae Kami (Prae)	100.00%	..	Unknown	
Laplae	23.16%	76.84%	40.22%	59.78%
Average North	20.83%	79.67%	23.83%	76.17%

TABLE XXIV. D.

Percentage of debts and loans outstanding at the end of
B. E. 2476 with related creditors and debtors.

CENTRAL AND SOUTH-EAST SIAM.

REGION	DEBTS		LOANS	
	Relatives	Non-relatives	Relatives	Non-relatives
Bangkok	19.81%	80.19%	11.26%	88.74%
Nontaburi	66.25%	33.75%	47.27%	52.73%
Chaxerngsao	39.48%	60.52%	Unknown	
Dhanyaburi	15.92%	84.08%	9.10%	90.90%
Ayuthia	69.84%	30.16%	24.35%	75.65%
Lopburi	45.81%	54.19%	44.20%	55.80%
Saraburi	46.54%	53.46%	19.18%	80.82%
Supanburi	86.04%	13.96%	82.13%	17.87%
Uthai Dhani	44.58%	55.42%	88.73%	11.27%
Pitsanulok	92.73%	7.27%	Unknown	
Bejraburi	19.75%	80.25%	Unknown	
Average Central	48.27%	51.73%	37.35%	62.65%
CHANTABOBN				
Ta Mai	56.78%	43.22%	34.66%	65.34%
Klong Naraya	32.65%	67.43%	16.67%	83.33%

TABLE XXV. A, B.

Percentage of debts outstanding at the end of B. E. 2476
with Siamese and Chinese creditors.

NORTH-EAST SIAM.

SOUTH SIAM.

REGION	Siamese	Chinese	REGION	Siamese	Chinese
Nongkai	100.00%	..	Naradhivas ..	100.00%	..
Udon	100.00%	..	Pattani	Unknown	
Khonkaen ..	97.64%	2.36%	Songkla	100.00%	..
Pu Vieng ..	100.00%	..	Trang	100.00%	..
Sakolnagor ..	No debts		Nag. Sridhamaraj	100.00%	..
Ubol	100.00%	..	Surat	100.00%	..
Khukan	98.84%	1.16%	Jumbor	75.75%	24.25%
Nag. Rajasima ..	99.70%	0.30%			
Average North-east ..	99.66%	0.34%	Average South	84.95%	15.05%

Satisfactory information could not always be obtained concerning the racial ancestry of the creditor. Percentages were calculated only on the basis of those debts for which reliable information appeared to be at hand. The data for Pattani, on this score, were inadequate.

TABLE XXV. C, D.

Percentage of debts outstanding at the end of B. E. 2476
with Siamese and Chinese creditors.

NORTH SIAM.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Siamese	Chinese	REGION	Siamese	Chinese
Chang Puak (Chiengmai) ..	100.00%	..	Bangkok ..	80.39%	19.61%
Mae Hiah (Chiengmai) ..	78.55%	21.45%	Nontaburi ..	99.10%	0.90%
San Mahapon (Chiengmai) ..	80.59%	19.41%	Chaxerngsao ..	77.10%	22.90%
Lampun ..	100.00%	..	Dhanyaburi ..	98.24%	1.76%
Na Kuam (Lampang) ..	No debts		Ayuthia ..	99.58%	0.42%
Ban Sadej (Lampang) ..	Unknown		Lopburi ..	83.32%	16.68%
Chiengrai ..	Unknown		Saraburi ..	95.44%	4.56%
Chiengsen ..	100.00%	..	Supanburi ..	98.89%	1.11%
Pa Daeng (Prae) ..	100.00%	..	Uthai Dhani ..	99.93%	0.07%
Mae Kami (Prae) ..	100.00%	..	Pitsanulok ..	100.00%	..
Laplae ..	100.00%	..	Bejraburi ..	26.58%	73.42%
			Average Center ..	90.52%	9.48%
			CHANTABUN		
Average North ..	87.01%	12.99%	Ta Mai ..	64.75%	35.25%
			Klong Naraya ..	87.58%	12.42%

The data for Ban Sadej and Chiengrai were too restricted for calculation of percentages.

TABLE XXVI. A.

Interest rates demanded and actually paid during 2476 on debts.
and loans outstanding at the end of B. E. 2475.⁽¹⁾

NORTH-EAST SIAM.

REGION	Demanded on debts	Paid on debts	Demanded on loans	Received on loans
Nongkai	10.15%	..	11.34%	14.17%
Udon .. .. .	..	..	..	..
Khonkaen .. .. .	..	..	..	..
Pu Vieng	15.00%	..	2.91%	3.33%
Sakolnagor .. .. .	..	..	..	..
Ubol	1.72%	1.72%	..	0.91%
Khukan	15.56%	7.78%	No loans	
Nag. Rajasima	7.36%	4.40%	13.39%	36.64%
Average North-east	7.38%	4.16%	9.06%	13.27%

(1) For each community, and for the division as a whole, the computations were made in the following way :

All amounts of loans or debts outstanding at the end of 2475 were added together, all interest demands during 2476 were added together, and all interest payments during 2476 were added together. Percentages were calculated from these totals in each case.

Since no interest is demanded on many contracts, this method of calculation gives average percentages somewhat lower than would be obtained if the demands alone had been averaged but,—since highest interest rates are usually demanded on small debts and it is in the case of small debts that interest is least often asked,—the averages obtained in this way probably give the fairest results. Interest rates on medium and large sized contracts are usually designed to comply with the law.

TABLE XXVI. B.

Interest rates demanded and actually paid during 2476 on debts and loans outstanding at the end of B. E. 2475.

SOUTH SIAM.

REGION	Demanded on debts	Paid on debts	Demanded on loans	Received on loans
Naradhiwas .. .. .	..	..	3.26%	1.40%
Pattani .. .. .	..	5.00%	8.00%	5.00%
Songkla	13.94%	10.30%	..	..
Trang .. .. .	..	19.67%	1.18%	..
Nag. Sridhamaraj .. ..	..	3.60%	96.00% ⁽¹⁾	..
Surat	19.00%	10.83%	12.57%	..
Jumbor	19.00%	13.68%	No loans	
Average South	13.55%	10.74%	9.49%	0.82%

(1) This figure is correctly calculated. Individual loans in this community are small, and it is quite customary to demand interest at the rate of 10% per month. It is noteworthy that not one satang of this interest was received during 2476. The data are quite in keeping with the reputation of the region. Since the average individual, when confronted with official investigators, is more likely to tell about the high rates of interest that he is asked to pay than those which he hopes to obtain, the difference between demands on debts and on loans is all the more striking.

At the time of the 2474 Survey, it was found that debts in the Songkla region were of this same character. Since the amounts involved are small, there is room for wide variation in the averages.

TABLE XXVI. C.

Interest rates demanded and actually paid during 2476 on debts
and loans outstanding at the end of B. E. 2475.

NORTH SIAM.

REGION	Demanded on debts	Paid on debts	Demanded on loans	Received on loans
Chang Puak (Chiengmai)	8.78%	9.89%	14.90%	8.20%
Mae Hiah (Chiengmai)	5.00%	9.96%	12.04%	9.77%
San Mahapon (Chiengmai)	1.16%	7.20%	4.48%	8.43%
Lampun	7.53%	6.04%	..	..
Na Kuam (Lampang) .. ..	..	..	..	1.94%
Ban Sadej (Lampang)	1.99%	1.99%	..	..
Chiengrai .. .. .	..	..	11.27%	2.28%
Chiengsen	No debts		..	0.84%
Pa Daeng (Prae)	3.76%	3.76%	..	..
Mae Kami (Prae) .. .. .	..	9.84%	..	..
Laplas	11.55%	2.38%	9.37%	4.42%
Average North	8.84%	4.95%	7.29%	5.07%

TABLE XXVI. D.

Interest rates demanded and actually paid during 2476 on debts
and loans outstanding at the end of B. E. 2475.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Demanded on debts	Paid on debts	Demanded on loans	Received on loans
Bangkok	14.27%	4.76%	11.17%	3.06%
Nontaburi	12.03%	2.26%	13.90%	5.48%
Chaxerngsao	13.52%	14.06%	14.43%	13.11%
Dhanyaburi	14.04%	6.78%	15.00%	5.97%
Ayuthia	7.08%	5.65%	14.68%	4.47%
Lopburi	6.82%	5.93%	10.37%	3.49%
Saraburi	13.88%	3.65%	9.79%	2.48%
Supanburi	12.10%	9.68%	12.09%	3.36%
Uthai Dhani	9.97%	6.37%	12.52%	9.04%
Pitsanulok	6.82%	3.80%	..	..
Bejraburi	7.63%	8.60%	15.00%	..
Average Central	11.25%	5.53%	13.15%	2.14%
	CHANTABUN			
Ta Mai	9.60%	7.10%	5.67%	2.99%
Klong Naraya	11.01%	7.04%	8.94%	1.75%

TABLE XXVII. A, B, C, D.

Average amount actually borrowed during the year B. E. 2476
and average increases in debt due to accumulation.

DIVISION	Cash and ⁽¹⁾ commodities	Accumula- ⁽²⁾ tion	Total debt increases
North-east	1.32 ⁽³⁾ (97.06%)	0.40 ⁽⁴⁾ (2.94%)	1.36 (100.00%)
South	4.46 ⁽⁵⁾ (99.33%)	0.03 ⁽⁶⁾ (0.67%)	4.49 (100.00%)
North	3.34 ⁽⁷⁾ (94.35%)	0.20 ⁽⁸⁾ (5.65%)	3.54 (100.00%)
Center ⁽⁹⁾	32.98 ⁽¹⁰⁾ (87.41%)	4.75 ⁽¹¹⁾ (12.59%)	37.73 (100.00%)

(1) "Cash and commodities" includes all sums actually borrowed in cash or goods during the year, and all goods bought on credit during the year but unpaid for at the end of the year.

(2) "Accumulation" includes accumulated unpaid interest on debts, accumulated unpaid land taxes, accumulated unpaid land rentals, etc.

(3) No debt increases took place in the Nongkai or Sakolnagor regions.

(4) All accumulation was in the Nagor Rajasima region.

(5) Debt increases took place in the Southern regions.

(6) All accumulation was in the Surat region.

(7) No debt increase took place in the Na Kuam commodity.

(8) All accumulation took place in the Laplae region.

(9) The two Chantabun villages are not included in the average for the Center. High average increases of Baht 117.46 in Ta Mai were all cash or commodities: average increases of Baht 8.46 in Klong Naraya were 9% in accumulation.

(10) Cash increases in all Central commodities.

(11) See detailed analysis in following table.

TABLE XXVIII. D.

Analysis for debt increases due to accumulation during B. E. 2476.

CENTRAL SIAM.

REGION	Accumulated unpaid interest on debts	Accumulated unpaid land taxes	Accumulated unpaid land rentals	Other	Total debt increase
Bangkok	6.19	0.78	0.82	0.10	7.89
Nontaburi.,	No debt increase due to accumulation.				
Chaxerngsao	0.98	1.83	..	2.13 ⁽¹⁾	4.93
Dhanyaburi	0.70	..	10.69	0.13	11.51
Ayuthia	1.50	..	19.55	..	21.05
Lopburi	No debt increase due to accumulation.				
Saraburi	6.13	..	..	..	6.13
Supanburi	No debt increase due to accumulation.				
Uthai Dhani	No debt increase due to accumulation.				
Pitsanulok .. .. .	..	0.78	..	..	0.78
Bejraburi	0.36	..	..	..	0.36
Average Center	1.89	0.92	2.83	0.21	4.75
Percentage Center	29.26%	6.74%	59.56%	4.42%	100.00%

(1) This amount of Baht 2.13 in Chaxerngsao represents a single unpaid gambling loss of Baht 85.00.

TABLE XXIX. A, B, C, D.

Average amount actually loaned out during the year B. E. 2476
and average increases in loans due to accumulation.

DIVISION	Cash and ⁽¹⁾ commodities	Accumula- ⁽²⁾ tion	Total loan increases
North-east	2.63 ⁽³⁾ (100.00%/o)	..	2.63 (100.00%/o)
South	0.22 ⁽⁴⁾ (40.20%/o)	0.32 ⁽⁵⁾ (59.80%/o)	0.54 (100.00%/o)
North	0.50 ⁽⁶⁾ (100.00%/o)	..	0.50 (100.00%/o)
Center ⁽⁷⁾	2.86 ⁽⁸⁾ (65.11%/o)	1.53 ⁽⁹⁾ (34.89%/o)	4.39 (100.00%/o)

(1) "Cash and commodities" includes all sums actually loaned out in cash or goods during 2476, and also all goods sold on credit during the year but unpaid for at the end of the year.

(2) "Accumulation" includes accumulated unpaid interest on loans, accumulated unpaid land rentals, etc.

(3) No increases were made in the Khonkaen, Sakolnagor, Khukan, or Nagor Rajasima regions.

(4) No increases were made in the Naradhivas, Songkla, or Jumbor regions.

(5) All accumulation was in the Surat region,—Baht 2.25 per family.

(6) Increases took place only in the Mae Hiah, San Mahapon, Lam-pun, and Laplae regions.

(7) The two Chantabun villages are not included in the average for the Center. All increases in these two villages were in cash.

(8) Cash increases were made in all except the Pitsanulok region.

(9) Accumulations averaged Baht 4.00 per family in Ayuthia due to unpaid interest on loans, Baht 2.38 per family in Supanburi due to unpaid interest on loans, Baht 4.50 per family in Saraburi due to unpaid interest on loans and also Baht 6.00 per family in Saraburi due to unpaid land rentals.

TABLE XXX. A, B, C, D.

Average amounts actually repaid on debts (excluding interest payments) and debt reductions due to other causes in B. E. 2476.

DIVISION	Cash and commodity repayments	Repayments forced by foreclosure	Other debt reductions	Total debt reductions
North-East	0.55 ⁽¹⁾ (100.00%)	.. .	..	0.55 (100.00%)
South	0.88 ⁽²⁾ (63.31%)	0.51 ⁽³⁾ (36.69%)	..	1.39 (100.00%)
North	1.04 ⁽⁴⁾ (100.00%)	..	..	1.04 (100.00%)
Center ⁽⁵⁾	23.63 ⁽⁶⁾ (66.83%)	9.74 ⁽⁷⁾ (27.55%)	1.99 ⁽⁸⁾ (5.63%)	35.36 (100.00%)

(1) No debt reductions in the Udorn region.

(2) Voluntary debt reductions in all regions.

(3) All foreclosures in the Jumbor region,—Baht 3.57 per family.

(4) Voluntary debt reductions in all except the Chiengsen region.

(5) The two Chantabun villages are not included in the averages for the Center. There were significant cash reductions in both villages, and no foreclosures

(6) Voluntary debt reductions in all regions.

(7) Foreclosures in Central Siam were,—Saraburi (Baht 70.00 per family), Dhanyaburi (Baht 25.63 per family), and Lopburi (Baht 11.50 per family).

(8) These reductions took place in the Pitsanulok region, and consisted of arbitrary reductions granted by the Co-operative Societies to a local society in this village as a result of extreme damage by flood in several consecutive years.

TABLE XXXI. A, B, C, D.

Average amounts actually received as repayment of loans (excluding interest payments) during B. E. 2476.

DIVISION	Cash and commodity repayments	Repayments forced by foreclosure	Total loan reduction
North-east	0.25 ⁽¹⁾ (100.00%)	..	0.25 (100.00%)
South	2.32 ⁽²⁾ (100.00%)	..	2.32 (100.00%)
North	2.56 ⁽³⁾ (87.58%)	0.37 ⁽⁴⁾ (12.42%)	2.93 (100.00%)
Center ⁽⁵⁾	9.88 ⁽⁶⁾ (50.85%)	9.55 ⁽⁷⁾ (49.15%)	19.43 (100.00%)

(1) No reductions took place in the Khonkaen, Sakolnagor, Khukan, or Nagot Rajasima regions.

(2) No reductions took place in the Nagor Sridhamaraj, Surat, or Jumbor regions.

(3) Significant reductions took place only in the San Mahapon, Na Kuam, and Pa Daeng villages.

(4) Foreclosures took place only in San Mahapon,—averaged Baht 4.00 per family in this village.

(5) The two Chantabun villages are not included in the averages for Central Siam. There were small cash reductions in both villages,—and foreclosures averaging Baht 2.88 per family in Klong Naraya.

(6) Significant reductions took place in all regions except those of Lopburi and Dhanyaburi.

(7) All foreclosures took place in two of the eleven Central villages studied. Averages per family were Baht 50.00 in Nondaburi, and Baht 55.00 in Supanburi.

TABLE XXXII. A.

Loans⁽¹⁾ outstanding at end of B. E. 2475 and B. E. 2476,
net increase or reduction during 2476, and number of families
with loans at the end of B. E. 2476.

NORTH-EAST SIAM.

REGION	2475 Loans	2476 Loans	Percentage which 2476 loans are of 2475 loans	NET AVERAGE		Number of families with loans end 2476
				Incr.	Red'n.	
Nongkai	31.75	50.88	160.25%	19.13	..	8
Udorn	1.35	0.85	.. (2)	..	0.50	3
Khonkaen	0.40	0.40	..	..	..	2
Pu Vieng	8.25	9.05	109.70%	0.80	..	7
Sakolnagor	0.15	0.15	..	..	..	1
Ubol	2.75	2.35	..	..	0.40	3
Khukan	No Loans		..	..	..	0
Nag. Rajasima	4.75	4.75	..	..	..	4
Average North-east	6.18	8.55	138.35%	2.98	..	28
Percentage of all North-eastern families with loans						8.75%

(1) All figures are averages in Baht: Satang per household.

(2) These percentages were not calculated in those cases where the average loans were so small that the percentage would be of no significance.

TABLE XXXII. B.

Loans⁽¹⁾ outstanding at end of B. E. 2475 and B. E. 2476,
net increase or reduction during 2476, and number of families
with loans at the end of B. E. 2476.

SOUTH SIAM.

REGION	2475 Loans	2476 Loans	Percentage which 2476 loans are of 2475 loans	NET AVERAGE		Number of families with loans end 2476
				Incr.	Red'n.	
Naradhiyas	10.75	8.25	76.74%	..	2.50	4
Pattani	7.50	5.45	..	..	2.05	2
Songkla	16.00	5.50	34.38%	..	10.50	2
Trang	6.13	5.88	95.92%	..	0.25	6
Nag. Sridhamaraj ..	2.50	3.00	..	0.50	..	3
Surat	20.88	23.19	111.06%	2.31	..	4
Jumbor	No Loans		..	..	..	..
Average South	9.11	7.32	80.35%	..	1.78	21
Percentage of all Southern families with loans						7.50%

(1) See footnotes to preceding Table A.

TABLE XXXII, C.

Loans⁽¹⁾ outstanding at the end of B.E. 2475 and B.E. 2476, net increase or reduction during 2476, and number of families with loans at the end of B.E. 2476.

NORTH SIAM.

REGION	2475 Loans	2476 Loans	Percentage which 2476 loans are of 2475 loans	NET AVERAGE		Number of families with loans end 2476
				Incr.	Red'n.	
Chang Puak (Chiengmai)	2.44	2.44	..	..	..	1
Mae Hiah (Chiengmai)	13.32	14.50	108.86%	1.18	..	3
San Mahapon (Chiengmai)	45.21	30.21	66.82%	..	15.00	6
Lampun	5.40	5.65	104.63%	0.25	..	2
Na Kuam (Lampang)	16.25	2.00	12.31%	..	14.25	1
Ban Sadej (Lampang)	0.10	0.10	..	..	..	1
Chiengrai	24.13	24.13	100.00%	..	..	1
Chiengsen	4.16	4.16	..	..	..	2
Pa Daeng (Prae)	1.43	..	..	..	1.43	0
Mae Kami (Prae)	0.63	0.63	..	..	..	1
Laplae	73.63	76.11	103.37%	2.49	..	7
Average North	16.97	14.54	85.68%	..	2.43	25
Percentage of all Northern families with loans						5.68%

(1) See footnotes to preceding Table A.

TABLE XXXII. D.

Loans⁽¹⁾ outstanding at the end of B.E. 2475 and B.E. 2476, net increase or reduction during 2476, and number of families with loans at the end of B.E. 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	2475 Loans	2476 Loans	Percentage which 2476 loans are of 2475 loans	NET AVERAGE		Number of families with loans end 2476
				Incr.	Red'n.	
Bangkok	138.30	137.04	99.09%	..	1.26	24/156 ⁽²⁾
Nontaburi	1409.95	1311.20	93.00%	..	98.75	11
Chaxerngsao	22.88	21.13	92.35%	..	1.75	2
Dhanyaburi	291.25	291.26	100.00%	0.01	..	2
Ayuthia	113.50	96.00	84.58%	..	17.50	8
Lopburi	67.25	70.00	104.09%	2.75	..	4
Saraburi	294.09	296.30	100.75%	2.21	..	11
Supanburi	167.25	114.43	68.42%	..	52.82	10
Uthai Dhanl	16.88	19.75	120.57%	3.87	..	5
Pitsanulok	13.75	11.63	84.58%	..	2.12	1
Bejraburi	0.43	1.00	..	0.57	..	1
Average Center	230.46	215.43	93.48%	..	15.03	79
Percentage of all (556) Central families with loans						14.21%
CHANTABUN						
Ta Mai	817.45	810.70	97.87%	..	6.75	12
Klong Naraya	24.30	15.40	63.37%	..	8.90	4

(1) See footnotes to preceding Table A.

(2) 156 families were studied in the village near Bangkok: 42 of these had loans at the end of B. E. 2476.

TABLE XXXIII. A.

Net Indebtedness⁽¹⁾ at the end of B.E. 2475 and B.E. 2476,
and net increase or reduction during 2476.

NORTH-EAST SIAM.

REGION	2475	2476	Percentage which 2475 loans are of 2475 debts	Percentage which 2476 loans are of 2476 debts	NET AVERAGE	
					Incr.	Red'n.
Nongkai	-30.45	-50.00	.. ⁽²⁾	19.55
Udon	- 0.91	- 0.16	..	..	0.75	..
Khonkaen	- 0.34	0.32	..	..	0.66	..
Pu Vieng	- 8.00	- 7.57	..	..	0.43	..
Sakolnagor	0.15	- 0.15	..	..	..	0.30
Ubol	- 1.66	- 0.07	..	..	1.59	..
Khukan	0.45	2.48	..	..	2.03	..
Nag. Rajasima	39.08	40.90	..	..	1.82	..
Average North-east	- 0.22	- 1.78	103.69%	126.29%	..	1.56

(1) For an explanation of the way in which these figures were computed, see pages 326-327 in the text.

(2) These percentages were not computed whenever either the average debt or loan was less than five Baht.

TABLE XXXIII. B.

Net Indebtedness⁽¹⁾ at the end of B.E. 2475 and B.E. 2476,
and net increase or reduction during 2476.

SOUTH SIAM.

REGION	2475	2476	Percentage which 2475 loans are of 2475 debts	Percentage which 2475 loans are of 2475 debts	NET AVERAGE	
					Incr.	Red'n.
Naradhivas ..	- 4.50	- 0.80	172.00%	110.74%	3.70	..
Pattani	- 7.36	- 2.49	..	..	4.87	..
Songkla	-11.87	- 0.12	..	102.23%	11.75	..
Trang	- 4.60	- 3.12	..	..	1.48	..
Nag. Sridhamaraj	2.50	2.75	..	..	0.25	..
Burat	-18.13	-18.81	..	..	..	0.68
Jumbor	25.59	38.45	..	..	12.86	..
Average South	- 2.63	2.27	140.59%	76.33%	4.90	..

(1) See footnotes to preceding Table A.

TABLE XXXIII. C.

Net Indebtedness⁽¹⁾ at the end of B.E. 2475 and B.E. 2476,
and net increase or reduction during 2476.

NORTH SIAM.

REGION	2475	2476	Percentages which 2475 loans are of 2475 debts	Percentages which 2476 loans are of 2476 debts	NET AVERAGE	
					Incr.	Red'n.
Chang Puak (Chiengmai) ..	2.96	4.11	..	..	1.15	..
Mae Hiah (Chiengmai) ..	16.87	17.38	44.12%	45.48%	0.51	..
San Mahapon (Chiengmai) ..	-16.73	- 1.48	158.74%	105.15%	15.25	..
Lampun	4.32	3.95	55.56%	58.85%	..	0.37
Na Kuam (Lampang) ..	-10.75	- 2.00	295.45%	..	8.75	..
Ban Sadej (Lampang) ..	0.91	1.01	..	..	0.10	..
Chiengrai ..	-12.88	-12.88	214.49%	214.46%	..	..
Chiengsen ..	- 4.16	- 3.99	..	..	0.17	..
Pa Daeng (Prae)	3.22	5.20	..	..	1.98	..
Mae Kami (Prae)	0.17	0.75	..	..	0.58	..
Laplae	- 9.38	16.74	114.60%	81.97%	26.12	..
Average North	- 2.31	2.62	115.76%	84.73%	4.93	..

(1) See footnotes to preceding Table A.

TABLE XXXIII. D.

Net Indebtedness⁽¹⁾ at the end of B.E. 2475 and B.E. 2476,
and net increase or reduction during 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	2475	2476	Percentages which 2475 loans are of 2475 debts	Percentages which 2476 loans are of 2476 debts	NET AVERAGE	
					Incr.	Red'n.
Bangkok	12.35	44.17	91.80%	75.62%	31.82	..
Nontaburi	-885.05	-747.99	268.61%	232.81%	137.06	..
Chaxerngseo	62.20	117.95	26.89%	15.19%	55.75	..
Dhanyaburi	-87.95	-58.43	114.81%	125.10%	..	20.86
Ayuthia	207.50	186.10	35.36%	34.04%	..	21.50
Lopburi	131.00	131.00	33.92%	34.67%	..	..
Saraburi	65.02	0.38	81.69%	99.87%	..	64.64
Supanburi	70.28	153.52	70.41%	42.71%	83.24	..
Uthai Dhani	156.12	152.34	9.50%	11.48%	..	3.78
Pitsanulok	96.16	81.43	12.51%	12.50%	..	14.73
Bejraburi	132.95	140.93	..	..	7.98	..
Average Center	0.99	18.39	99.57%	92.13	17.40	..
CHANTABUN						
Ta Mai	-150.48	-69.81	190.12%	128.71%	81.17	..
Klong Naraya	49.40	55.54	82.97%	21.71%	6.14	..

(1) See footnotes to preceding Table A.

CHAPTER XVI.

TOTAL INCOME AND EXPENDITURE: CASH SAVINGS.

The figures on total income and expenditure are of much less importance than might be assumed if the accounting principles used by the Second Survey were not understood. Total income includes much which is not earned, and total expenditure includes much which is not spent for useful purposes. Comparison of total income with total expenditure leads us, in fact, only to cash balances and the changes which took place in these during the year. We may make this clearer, perhaps, by listing in budgetary form the total transactions of the average Central household during 2476.

Annual Income (Earnings) 184.56	Annual Expenditure (Chiefly costs of operations and maintenance) 177.46
Capital Income (Chiefly liquidation of capital goods) ... 45.71	Capital Expenditure (Chiefly investments in capital goods) 36.90
Loan Reduction (Chiefly repayments received on loans) ... 19.42	Loan Increase (Chiefly money loaned to others) 4.40
Debt Increase (Chiefly money borrowed) 37.72	Debt Reduction (Chiefly repayments made on debts) 35.36
Extraordinary Income (Chiefly gifts received) 4.88	Extraordinary Expenditure (Expenditures for non-useful purposes) ... 32.55
TOTAL INCOME 292.29	TOTAL EXPENDITURE 286.67
TOTAL EXPENDITURE ... -286.67	
"Profit" 5.62	
(Gain in cash savings) <u>5.62</u>	

The "profit" or "loss" which results from a comparison of total income and total expenditure is simply a statement of the change in net savings during the year. The community which invested during the year even more than its earned profits is shown with a "loss" as a result of this comparison, because it has had to pay for its high investments with a part of the cash savings from previous years. Let us compare the divisional averages:

TOTAL INCOME.

DIVISION	Annual Income	Capital Income	Loan Reduction	Debt Increase	Extraordinary Income	Total Income
North-east	30.16	4.37	0.25	1.32	0.97	37.07
South	73.89	10.01	2.32	4.49	0.83	91.54
North	65.20	6.47	2.93	3.54	0.61	78.75
Center	184.56	45.71	19.42	37.72	4.88	292.29

TOTAL EXPENDITURE.

DIVISION	Annual Expend.	Capital Expend.	Loan Increase	Debt Reduction	Extraordinary Expend.	Total Expend.
North-east	29.58	13.55	2.63	0.55	6.46	52.77
South	58.59	9.63	0.54	1.39	12.35	82.50
North	51.93	15.81	0.50	1.04	10.36	79.64
Center	177.46	36.90	4.40	35.36	32.55	286.67

"PROFIT" AND "LOSS."

DIVISION	Total Income	Total Expenditure	"Profit"	"Loss"
North-east	37.07	52.77	..	15.70
South	91.54	82.50	9.04	..
North	78.75	79.64	..	0.89
Center	292.29	286.67	5.62	..

The average household of North-east Siam made a "Loss" of Baht 15.70 in 2476, that of the South made a "profit" of Baht 9.04, that of the North made a "loss" of Baht 0.89, and that of the Center made a "profit" of Baht 5.62. What do these "profits" and "losses" really mean?

In our analysis of operating costs and income we found that the average household of all areas made a small profit on its transactions during 2476. Here we find that the balance of total transactions led to apparent "losses" in two areas. These "losses" are not really losses in the true sense of the word: they are simply expenditures in excess of receipts. What they really mean is that the cash balance of the average household was decreased in the case of a "loss," and increased in the case of a "profit."

Most rural households of Siam, like the peasant households of most other countries, keep at home a small cash balance. Surpluses cannot easily be invested, and the economy of the country is not sufficiently developed to make possible savings bank systems. Excess funds, therefore, are hidden in the house and kept until a need for them arises. The real meaning of the figures which we have just quoted is:

The average household of the North-east had at the end of 2476 Baht 15.70 less in cash savings in the house than it had at the beginning of the year.

The average household of the South had at the end of 2476 Baht 9.04 more in cash savings than it had at the beginning of the year.

The average household of the North had at the end of 2476 Baht 0.89 less in cash savings than it had at the beginning of the year.

The average household of the Center had at the end of 2476 Baht 5.62 more in cash savings than it had at the beginning of the year.

We may examine these figures in the light of the regional data presented in Tables XXXVI at the end of this chapter.

In the North-east the average household of all communities spent some of its cash savings during the year. In the Nongkai village the amount so spent amounted to the high average figure of Baht 71.30, and the reason for it is that the community, although it made a big profit on its operations during the year, invested far more during the year than the amount of its earned profits. It liquidated very little capital property, received very little in repay-

ment of outstanding loans, and borrowed nothing; but it invested large amounts in capital goods and in new loans. A part of these funds came from the large cash profits during the year, but a much larger part came from the cash savings of previous years.⁽¹⁾

All the North-eastern communities spent small amounts of cash savings during the year, but those which had for many years been in an unsatisfactory economic condition had very little in the way of cash savings to spend. The Khukan village which had to borrow to pay taxes contained few households with any cash savings at all, and the average expenditure from savings amounted only to Baht 0.76.

In the South all communities showed appreciable increases in their cash balances during 2476. All but that near Naradhivas made profits on their operations during the year, and none invested in capital goods or in new loans as heavily as they would have been justified in doing.

In the North, although the average household made a profit on operations of Baht 13.27, net investments were slightly higher than the earned profits and we find a small average expenditure from cash savings. The North-east and the North are, as is well known, populated by people who are in general far more energetic and progressive than those of the South and Center. Earned profits were invested during the year and appreciable amounts were drawn from cash savings for the same purpose.

In the Center there were considerable fluctuations from village to village. Some communities invested more than their earned profits, and others invested less. Some communities had to liquidate capital property or borrow money to cover their operating losses, and others were able to cover these losses from cash savings. Cash savings were small in most communities, and the average amount which could be spent from this source was not great. On the average, cash savings increased slightly during the year.

(1) Decrease or increase in cash savings during the year was verified in the field by asking each farmer, after his schedule had been completed, to state as well as he could the amount of cash which he had had on hand at the end of 2475 and at the end of 2476. The difference between the two figures was then compared with the computed increase or decrease and, if it was within five per cent of the computed figure was allowed to stand and the schedule was considered, to be substantially accurate.

TABLE XXXIV. A.

Total Income Received during 2476.

NORTH-EAST SIAM.

REGION	Annual Income	Capital Income	Loan Reduction	Debt Increase	Extra. Income	Total Income
Nongkai	112.43	12.18	0.75	..	1.20	126.56
Udon	18.69	1.85	0.75	0.25	1.90	23.44
Khonkaen	24.08	8.98	..	0.71	1.33	30.04
Pu Vieng	12.23	5.00	0.03	1.35	1.04	19.65
Sakonagor	14.08	8.84	..	..	0.85	23.77
Ubol	13.64	1.07	0.50	1.38	0.43	17.01
Khukan	7.60	0.60	..	2.71	0.68	11.59
Nag. Rajasima	88.58	1.49	..	4.16	0.35	44.58
Average North-east	30.18	4.87	0.25	1.32	0.97	37.07

TABLE XXXIV. B.

Total Income Received during 2476.

SOUTH SIAM.

REGION	Annual Income	Capital Income	Loan Reduction	Debt Increase	Extra. Income	Total Income
Naradhivas	27.11	6.19	2.50	1.45	2.24	39.50
Pattani	152.73	..	2.50	2.95	0.03	158.21
Songkla	58.09	8.73	10.50	3.00	0.01	80.33
Trang	54.63	13.30	0.75	1.69	2.01	72.38
Nag. Sridbamaraj	33.64	2.30	..	0.81	0.65	37.41
Surat	74.56	9.76	..	3.67	0.88	88.87
Jumbor	116.37	29.77	..	17.90	0.03	164.07
Average South	73.89	10.01	2.32	4.49	0.83	91.54

TABLE XXXIV. C.

Total Income Received during 2476.

NORTH SIAM.

REGION	Annual Income	Capital Income	Loan Reduction	Debt Increase	Extra. Income	Total Income
Chang Puak (Chiengmai)	33.44	1.32	..	1.20	0.60	36.56
Mae Hiah (Chiengmai)	47.53	11.16	0.02	1.97	..	60.68
San Mahapon (Chiengmai)	160.58	6.66	16.50	2.75	..	186.49
Lampun	91.19	1.17	..	0.41	1.61	94.38
Na Kuam (Lampang)	113.14	21.23	14.25	..	1.12	149.74
Ban Sadej (Lampang)	26.24	0.69	..	0.49	0.25	27.67
Chiengrai	45.51	12.61	..	0.04	1.25	59.41
Chiengsen	33.59	11.42	..	0.17	..	45.18
Pa Daeng (Prae)	84.37	0.65	1.43	1.84	1.60	99.39
Mae Kami (Prae)	37.22	3.21	..	0.72	0.20	41.45
Laplae	94.49	1.02	0.01	29.84	0.13	125.49
Average North	65.20	6.47	2.93	3.54	0.61	78.75

TABLE XXXIV. D.

Total Income Received during 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Annual Income	Capital Income	Loan Reduction	Debt Increase	Extra. Income	Total Income
Bangkok	154.65	13.86	5.48	39.80	9.50	223.29
Nontaburi	472.87	64.66	112.25	64.56	12.28	726.62
Chaxerngsao	124.87	64.25	2.25	59.53	1.78	252.68
Dhanyaburi	264.96	60.14	..	35.56	8.93	369.39
Ayuthia	257.10	115.52	22.50	45.50	7.03	447.65
Lopburi	192.16	21.11	..	35.73	5.22	254.22
Saraburi	125.48	94.96	9.04	37.44	2.01	268.93
Supanburi	135.96	32.80	57.70	52.51	1.72	280.69
Uthai Dhani	111.10	10.18	1.88	14.65	0.05	137.86
Pitsanulok	69.89	10.14	2.13	14.03	0.88	97.07
Bejraburi	121.01	15.21	0.43	15.64	4.26	156.55
Average Central	184.56	45.71	19.42	37.72	4.88	292.29
CHANTABUN						
Ta Mai	543.00	37.67	10.75	117.46	5.50	714.38
Klong Naraya	112.20	19.26	10.13	8.46	1.18	151.23

TABLE XXXV. A.

Total Expenditures during 2476.

NORTH-EAST SIAM.

REGION	Annual Expend.	Capital Expend.	Loan Increase	Debt Reduction	Extra. Expend.	Total Expenditure
Nongkai	88.87	67.74	19.88	0.43	20.94	197.86
Udon	25.66	2.50	0.25	..	4.31	32.72
Khonkaen	25.29	13.41	..	0.05	7.96	46.71
Pa Vieng	17.36	10.53	0.83	0.13	5.18	34.03
Sakonagor	15.45	5.87	..	0.30	3.20	24.82
Ubol	16.64	3.78	0.10	0.19	3.26	23.97
Khunan	10.39	0.68	..	0.68	0.60	12.35
Nag. Rajasima	36.94	3.65	..	2.64	6.17	49.60
Average North-east	29.58	13.55	2.63	0.55	6.46	52.77

TABLE XXXV. B.

Total Expenditures during 2476.

SOUTH SIAM.

REGION	Annual Expend.	Capital Expend.	Loan Increase	Debt Reduction	Extra. Expend.	Total Expenditure
Naradhiwas	27.45	2.15	..	0.25	4.14	33.99
Pattani	88.31	31.46	0.45	0.13	19.77	140.12
Songkla	56.46	4.09	..	1.75	5.46	67.76
Trang	54.19	6.86	0.50	0.45	4.05	66.05
Nag. Sridhamaraj	26.79	2.30	0.50	0.06	2.86	32.51
Surat	57.06	11.29	2.31	2.04	14.75	87.45
Jumbor	99.84	9.28	..	5.04	35.42	149.58
Average South	58.59	9.63	0.54	1.39	12.35	82.50

TABLE XXXV. C.

Total Expenditures during 2476.

NORTH SIAM.

REGION	Annual Expend.	Capital Expend.	Loan Increase	Debt Reduction	Extra. Expend.	Total Expend.
Chang Puak (Chiangmai)	34.19	4.86	..	0.05	5.79	44.89
Mae Hiah (Chiangmai)	37.09	7.57	1.20	0.28	4.85	50.99
San Mahapon (Chiangmai)	114.00	31.76	1.50	2.50	23.10	172.86
Lampun	81.69	7.63	0.25	0.53	7.50	97.60
Na Kuam (Lampang)	71.47	65.81	..	5.50	19.25	162.03
Ban Bedej (Lampang)	21.76	0.68	..	0.39	1.78	24.61
Chiengrai	36.42	7.22	..	0.04	12.48	56.16
Chiengsen	25.96	12.96	..	..	2.57	41.49
Pa Daeng (Prae)	28.46	3.63	..	0.79	3.26	36.14
Mae Kami (Prae)	81.28	12.00	..	0.14	4.68	48.10
Laplas	88.87	19.81	2.50	1.24	28.68	141.10
Average North	51.93	15.61	0.50	1.04	10.36	79.64

TABLE XXXV. D.

Total Expenditures during 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Annual Expend.	Capital Expend.	Loan Increase	Debt Reduction	Extra. Expend.	Total Expend.
Bangkok	160.82	12.37	4.22	9.24	30.73	217.38
Nontaburi	444.16	163.86	13.50	26.25	86.39	734.16
Chaxeragsao	194.94	37.46	0.50	5.53	21.46	259.89
Dhanyaburi	245.57	26.88	0.01	56.41	51.70	380.57
Ayuthia	238.87	13.00	5.00	84.40	53.18	394.45
Lopburi	140.73	27.19	2.75	32.10	29.06	231.83
Saraburi	106.64	31.86	11.25	99.87	15.41	265.03
Supanburi	145.82	53.27	4.83	23.09	26.76	253.82
Uthai Dhani	92.19	13.85	5.25	15.06	9.21	135.56
Bitsanulok	60.04	17.79	..	30.68	17.18	125.89
Bejraburi	122.39	8.39	1.00	7.09	16.97	155.84
Average Center	177.46	36.90	4.40	35.36	32.55	286.67
	CHANTABUN					
Ta Mai	538.65	74.40	4.00	43.04	61.02	721.11
Klong Naraya	95.24	39.32	1.23	11.22	18.92	165.93

TABLE XXXVI. A.

"Profit" and "Loss" on All Transactions during 2476.

NORTH-EAST SIAM.

REGION	Total Income	Total Expenditure	TOTAL	
			Profit	Loss ⁽¹⁾
Nonghai	126.56	197.86	..	71.30
Udon	23.44	32.72	..	9.28
Khonkaen	30.04	46.71	..	16.67
Pu Vieng	19.65	34.03	..	14.38
Sakolnagor	23.77	24.82	..	1.05
Ubol	17.01	23.97	..	6.96
Khukan	11.59	12.35	..	0.76
Nag. Rajasima	44.58	49.60	..	5.02
Average North-east	37.07	52.77	..	15.70

(1) "Loss" is in fact net expenditure from cash savings.

TABLE XXXVI. B.

"Profit" and "Loss" on All Transactions during 2476.

SOUTH SIAM.

REGION	Total Income	Total Expenditure	TOTAL ⁽¹⁾	
			Profit	Loss
Naradhivas	39.50	33.99	5.51	..
Pattani	158.21	140.12	18.09	..
Songkla	80.33	67.76	12.57	..
Trang	72.38	66.05	6.33	..
Nag. Sridhamarsj	37.41	32.51	4.90	..
Surat	88.87	87.45	1.42	..
Jumbor	164.07	149.58	14.49	..
Average South	91.54	82.50	9.04	..

(1) "Profit" is in fact net increase in cash savings.

TABLE XXXVI. C.

"Profit" and "Loss" on All Transactions during 2476.

NORTH SIAM.

REGION	Total Income	Total Expenditure	TOTAL ⁽¹⁾	
			Profit	Loss
Chang Puak (Chiengmai)	36.56	44.89	..	8.33
Mae Hiah (Chiengmai)	60.68	50.99	9.69	..
San Mahapon (Chiengmai)	186.49	172.86	13.63	..
Lampun	94.38	97.60	..	3.22
Na Kuan (Lampang)	149.74	162.03	..	12.29
Ban Sadej (Lampang)	27.67	24.61	3.06	..
Chiengrai	59.41	56.16	3.25	..
Chiengsen	45.18	41.49	3.69	..
Pa Daeng (Prae)	39.39	36.14	3.25	..
Mae Kami (Prae)	41.45	48.10	..	6.65
Laplae	125.49	141.10	..	15.61
Average North	78.75	79.64	..	0.89

(1) "Profit" is in fact net increase in cash savings: "Loss" is in fact net expenditure from cash savings.

TABLE XXXVI. D.

"Profit" and "Loss" on All Transactions during 2476.

CENTRAL AND SOUTH-EAST SIAM.

REGION	Total Income	Total Expenditure	TOTAL ⁽¹⁾	
			Profit	Loss
Bangkok	223.29	217.38	5.91	..
Nontaburi	726.62	734.16	..	7.54
Chaxerngsao	252.68	259.89	..	7.21
Dhanyaburi	369.59	380.57	..	10.98
Ayuthia	447.65	394.45	53.20	..
Lopburi	254.22	231.83	22.39	..
Saraburi	268.93	265.03	3.90	..
Supanburi	280.69	252.82	27.87	..
Uthai Dhani	137.86	135.56	2.30	..
Pitsanulok	97.07	125.89	..	28.82
Bejraburi	156.55	155.84	0.71	..
Average Center	292.29	286.67	5.62	..
CHANTABUN				
Ta Mai	714.38	721.11	..	6.73
Klong Naraya	151.23	165.93	..	14.70

(1) "Profit" is in fact net increase in cash savings; "Loss" is in fact net expenditure from cash savings.

CHAPTER XVII.

ECONOMIC DEVELOPMENT.

Economic development is a process which involves many factors. They are of many different types and, if economic development is to be directed into lines which will hasten its realization, these many different factors must be fitted together like the pieces in a puzzle. Some fit together obviously: others, although essential to the complete picture, can be fitted in only with difficulty. The entire picture must be envisaged and, for this to be done, it is necessary that the opinions of experts in many different fields should be consulted, appraised, and correlated. No two people, perhaps, will agree as to the complete details of the picture, and it may be that experts within certain fields will feel that a picture which does not accentuate their particular fields must be erroneous. Even at the risk, however, of slighting certain specialized fields of development it is highly essential that an attempt should be made to define at least the outlines and salient features of the picture as a whole. For this purpose we may utilize the data of the Second Survey and such other general information as seems to be pertinent.

The problem which the Kingdom faces today, as do most other nations, is the attainment of a greater and less fluctuating national income through long-time and far reaching measures for the betterment of the financial status of its inhabitants.

It is apparent that the greater part of the rural people's income is derived from farming. Rice, today, is the direct source of most of the rural income and the indirect source of nearly all of the government income. Rice must be sold by the farmers and exported by the traders of the nation, while other agricultural produce must be sold by the farmers in return for the commercial and agricultural

produce of other nations and of other regions within Siam. This means the development of inland trade.

If rice is to be exported and commercial goods are to be imported, foreign trade must be expanded.

The farming population must be led to an appreciation of the methods by which they can make better use of the facilities now available to them for increasing their productivity, and they must be given such assistance by the government as can be afforded them with the assurance that it will not result in financial losses to the government nor in a weakening of the self-reliance and strength of character of the farmers.

INLAND TRADE.

In Chapters VIII and XII we have seen that the development of trade is the most important factor in the economic life of rural Siamese communities. Those villages where trade is extensive have the highest incomes, because the existence of trading provides opportunities for farmers, fishermen, and craftsmen to sell their produce. It is useless to expand production, if the communication does not exist which is necessary to trading. It would be futile, for instance, for the farmers of the North-east to increase production of silk and cotton today because they would be unable to sell it: it would be impossible today for the agents of textile industries to build up a system for collection of raw materials in the North-east. It would be equally impossible for the farmers of Central Siam to dispose of perishable produce such as fruits and vegetables. Lack of communication in the rural districts has prevented the development of trade and has resulted in an almost complete stagnation of commercial development. The commercialization of Central Siam has taken place because it is built on rice, and rice can be transported by slow methods without perishing. Let us examine and summarize the status of inland transport and communication in inland Siam as it is today.

The Railways. A great period of railway construction was carried out in Siam between (roughly) 1920 and 1930. The result of this has been to place Siam among the foremost Asiatic countries

in the status of its communication by rail. Figures are available which make this very clear by comparing the number of inhabitants in each of seven Asiatic countries with the number of miles of existing railways:⁽¹⁾

Country	Number of inhabitants per mile of railway
1. Malaya	3,977
2. Japan	4,734
3. Siam	6,623
4. Neth. East Indies	13,094
5. Fr. Indo China	14,448
6. Philippine Islands	14,953
7. China	63,214
(United States of America)	471)

It is plain that Siam compares very favorably in its railway development with countries which have a far higher degree of economic development. The railway system to-day joins up all the outstanding distribution points of inland Siam, and stretches important branches into all four of the major areas of the country. It seems certain that further expansion of the railways should be limited in the immediate future to completion of the line between Khonkaen and Udorn and construction of a line between Udorn and Nongkai. The extension of the line from Khonkaen to Udorn will not be financially justified unless the line is pushed on to Nongkai. Nongkai is a border town in close contact with French Laos and it is possible that it will be developed by the railways into a center of some commercial importance. Udorn is very unlikely to prove a profitable terminus. In the distant future it may prove desirable to extend branch lines from Central Siam to the Siamo-Burmese border: it may be doubted very seriously if any other railway construction in Siam will ever be profitable.

There is no reason to suppose that the suggested construction of a line from Khonkaen to Sakolnagor will prove profitable from

(1) Comparative data on transport which are presented in this and the following pages are taken from the "*Economic Handbook of the Pacific Area*", New York, 1934.

any point of view. Construction of good highways between the existing railways and Sakolnagor will be more profitable from the economic standpoint, will cost less, and will be more desirable in the opinion of military strategists.

The Highways. Siamese road construction has been allowed to stagnate during the period of railway construction. If we compare the number of square miles of area of each of several Asiatic countries with the number of miles of highway in each we find that Siam is extremely undeveloped in this respect :

Country	Number of square miles of area per mile of highways		
1. Malaya	5
2. Japan	8
3. Philippine Islands	13
4. Fr. Indo China	14
5. Neth. East Indies	20
6. China	134
7. Siam	225

(United States of America 0.8)

There exists a very great need for well-surfaced highways which can be used by motor vehicles in all seasons of the year. It is time for the established policy of non-interference with the railways to give way to a more far-sighted view which will recognize that the railways are already well developed, that certain types of trade which are absolutely essential to economic well-being cannot be handled by the railways and that,—since both railways and highways are government property,—it really doesn't much matter if the government derives its transport revenue directly from railways or indirectly from highways.

Experience in other parts of the world has shown that the railways are losing their position as the most important means of transport, and no policy of neglect of highways will prevent motor transport from taking over some of the trade which in the past was handled by rail. Further investment in railways is very likely to be a bad investment: investment in highways is absolutely essential

if the rural districts of Siam are to be opened to economic development.

Fortunately the Government has already recognized the gravity of the situation, and has set aside considerable funds for rural highway construction in 2478. It is to be hoped that this attitude will be continued, and that future years will see as great an emphasis on highways as was formerly applied to railways. If this is done, the economic development of rural Siam will become possible. It is to be hoped, also, that highways in the North-east will be pushed as fast as possible: it is in that area that the lack of communication is most seriously felt.

FOREIGN TRADE.

The Kingdom to-day handles its most important business, the rice trade, through middlemen in Hong Kong and Singapore. It must pay a large commission to these middlemen, and the traders have been guilty of such serious malpractice in mixing Siamese rice with inferior grades that "Siamese Rice" has to-day become a commercial name which does not imply that the rice is either Siamese in fact or that it is even of good quality. The foreign markets for Siamese rice are becoming smaller, and there is reason to fear that future years will see a great decline in the national and rural incomes derived from rice. This situation must be corrected insofar as it is possible.

The charges paid to Hong Kong and Singapore middlemen, and the weakening of the reputation of Siamese rice, can only be obviated by transferring the center of the Siamese rice trade from foreign cities to Bangkok, and this can only be done by making the Port of Bangkok open to deep-water ships.

Objections to the development of the Port are based on the fear that any dredging operations which are carried out on the bar at the mouth of the Menam Chao Phya will result in an increase in the amount of salt water which comes up to Dhonburi, and that such an increase would damage the crops of that regions. Any increase in salt water at Dhonburi would certainly have a serious effect on crops, but some of the world's foremost experts have definitely stated

that a channel through the bar at the mouth of the river will have no effect on the amount of salt water at Dhonburi.

The amount of salt water in the river at Dhonburi is determined by the length of the river between Dhonburi and the Gulf, and by the bulk of flow in the river itself. If the length of the river between Dhonburi and the Gulf is shortened,—as it will be if the river cuts through the isthmus of Paklat,—more salt water will come to the Dhonburi plantations. The same would be true if, for any reason, the amount of fresh water in the river were diminished. By cutting a ship channel through the bar, however, neither of these factors will be affected, and there will be no more salt water at Dhonburi than is there now. This matter has been very carefully investigated by experts who have studied comparable conditions in many other parts of the world; and there can be no doubt at all that their conclusions are correct.

It is a matter of the utmost importance to the entire Kingdom that political considerations in a single district should not be allowed to interfere with that development which will make it possible for Bangkok to take its place among the foremost commercial ports of Asia. Siam will not be able to compete with other nations for the foreign rice markets if the rice which is sold under its name is of inferior quality, and if it must pay excessive charges for trans-shipment in Hong Kong, Singapore, and Koh Sichang. It has been estimated that the actual costs of trans-shipment are not less than three million seven hundred and twenty five thousand Baht per year, and that the various prejudicial effects of an undeveloped port cost Siam roughly five million Baht per year in addition. The experts sent to Siam from the League of Nations concluded their report by saying that:

Improvement of the Port of Bangkok "is not only essential to the development of Siam's economic life but is also entirely justified on grounds of its own economic return, it will facilitate international trade and, finally, it will prove directly remunerative to an extent rarely met with in public works of this character."

THE CO-OPERATIVE SOCIETIES.

It has been pointed out that improved methods and techniques in agriculture and business must be brought to the farmers of Siam if they are to result in the economic development of which they are capable. It is not likely that practical education of the farming population of Siam can be carried out by the ordinary school systems, and it is improbable that schools designed for practical instruction would have any great success. Schoolboys cannot be taught rice agriculture by new methods so long as they must assist their families to grow rice by old methods, and Siamese farmers cannot afford either the time or the expenses which would be involved by courses of instruction in agricultural schools. Radio broadcasting of lectures would probably not have any great effect, as no individual farmer would risk his crops by trying out new methods which he had never seen employed and which he had only heard described by radio.

The Cooperative Societies are performing a very valuable service in extending credit to farmers on reasonable terms and it is certain that they can be made to serve as an invaluable educational agency in bringing knowledge of new techniques to the rural people. New techniques can be tried out by a united group of farmers on a small scale because, in that way, no great risk is incurred by any individual. The only education which will be of any real or immediate value to the rural population is that which can be performed by the Cooperative Societies in connection with their more routine services. It is necessary that they should be granted the funds which will make continued expansion possible, and it is desirable that due attention should be paid to the needs of the Bangkok offices of the Movement.

A program for the development of rural highways has already been started: it is pushed through with the same energy which characterized railway construction between 1920 and 1930 there can be no doubt that the question of inland communication and trade will be profitably solved.

Development of the Port of Bangkok has been allowed to stagnate because of unjustified fears of damages to crops in a few

districts : when this development is pushed great improvements will be felt both by the government and by the nation's farmers.

The importance of the Cooperative Societies has been recognized by the Government, and attention has been paid to their expansion : when trade and communication increase, the Societies will perform the invaluable service of assisting the farmers to develop the crops which will have most value to themselves and the Kingdom.

These three factors,—construction of inland highways, development of the Port of Bangkok, and continued expansion of the Cooperative Societies,—seem outstanding in their importance to Siamese economic development today.

APPENDIX A.

MEMBERSHIP OF THE COMMITTEE CONVENED BY THE MINISTRY OF ECONOMIC AFFAIRS TO DISCUSS AND PLAN THE SURVEY.

- H. S. H. Prince Sakol Varnakara Varavarna, Adviser to the Ministry
of Interior, Chairman,
- H. S. H. Prince Vimvaditya Rabibadhana, Under-Secretary of State
for the Ministry of Economic Affairs,
- Luang Dej Sahakorn, acting Under-Secretary of State for the
Ministry of Agriculture,
- Luang Chuljeeb Bijjadhara, Director-General of the Department of
Fisheries,
- Phra Pramonda Panya, acting Director-General of the Department
of Commerce,
- Phya Prasada Dhatukaraya, Director-General of the Department of
Science,
- Phya Ahara Pariraks, Secretary of the Administrative Division of
the Department of Agriculture,
- H. S. H. Prince Lakshanakara Kasemsanta, Head of the Section of
Systematic Botany,
- Dr. Phra Jan Vitivedt, Chief of Health Division, Department of
Public Health,
- Mom Dhavivongse Dhavalayasakdi,
- Phra Rajadharm Nides, acting Director-General of the Ecclesiastical
Department,
- James M. Andrews, Associate in Anthropology, Peabody Museum,
Harvard University.

APPENDIX B.

MEMBERSHIP OF THE SURVEY PARTY.

Economic Section

Mom Dhavivongse Dhavalayasakdi

Khun Sali Boriraks

Nai Rabil Bunnag

Nai Boonchuay Indrambaya

Nai Lunchieg Chodisalikor

Nai Thanu Satraphai

Nai Sangar Sharasuvarna

(Assistance in the economic work was also given by Nai Balloon Limbalik in all areas except the Center, by Nai Charoon Subsaeng in the North and North-east, by Khun Chanya Vicharn in the Center and South-east, by Nai Nibhandra Pungbun na Ayudhaya in the Center and Bangkok, by Nai Pongse Pintuydhn in Bangkok, and by Nai Sanong in the North-east.)

Medical and Anthropometric Section

Dr. Phra Jan Vitivedt

Dr. Khun Niddes Sukhakich

Dr. Kimkang Suvarnakich

Nai Som Sornavudh

Nai Somsakdi Pangavi

Nai Chun Chompunij

Nai Sodechai Chulobol

Nai Samak Patumanond

(Assistance in the medical work was also given by Dr. Siri Nagasompongse in the Center and South-east).

Special Observer for matters relating to Public Security

Major Luang Bhisidh Vidyakar