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SOCIO ECONOMIC DATA

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Author's Warning

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1. Introduction

This volume contains an analysis of the basic socio-economic data collected from the household questionnaire. The data from the survey villages is aggregated according to changwat (province). This data includes the age, education, responsibilities and employment of each household member and the possessions, size of house and pattern of land ownership for each household.

This analysis is directed not toward a specific project technology, but toward an overall understanding of the population in which these technologies are to be introduced. The age, education, and employment data indicate the availability and capability of a work force for implementing the technologies. It also provides an insight into the level of technology which can be introduced with a reasonable amount of training. The data on house size, possessions and land ownership provides information on the availability of land and housing area for the introduction of the new technologies as well as the current ownership of energy-using devices.

2. Age Distribution

The distribution of the survey population age is summarized in Table 1 and graphically presented in Figure 1. The provinces of Chiang Mai and Lampang have the lowest percentage of children under six years of age. This probably reflects the success of birth control activities in these areas, as well as the relatively small proportion of women of the child bearing age. The provinces with the largest percentage of children under six, Srisaket, Roi-et and Udorn Thani are also the poorest and are more remote from urban centers.

For all of the provinces, the population below 20 years of age represents between 40% and 50% of the total population. Those between 20 and 40 years old account for 27% to 33% of the population.* The population over 40 is largest in Lampang, Chiang Mai, Chantaburi and Songkla, where it represents over one-fourth of the population. These four are the wealthier provinces. In the poorer provinces of Srisaket, Roi-et and Udorn Thani, the over-40 population represents less than 20% of the survey population. The tendency toward older populations in the survey villages of Chiang Mai and Lampang and to a lesser extent in Songkla and Chantaburi, is probably due to urban migration, greater life expectancy, better delivery of health care and birth control services, or a combination of these.

The provinces of Srisaket, Roi-et and Udorn Thani face the greatest demand for services in the future, given their high proportion of young people. The demands for sources of energy will increase with the growth in population. These provinces also have the largest percentage of their population in the prime working ages between 13 and 40.

*The population figures include household members who were not present due to obtaining seasonal employment in the urban centers when the demand for agricultural labor was low.

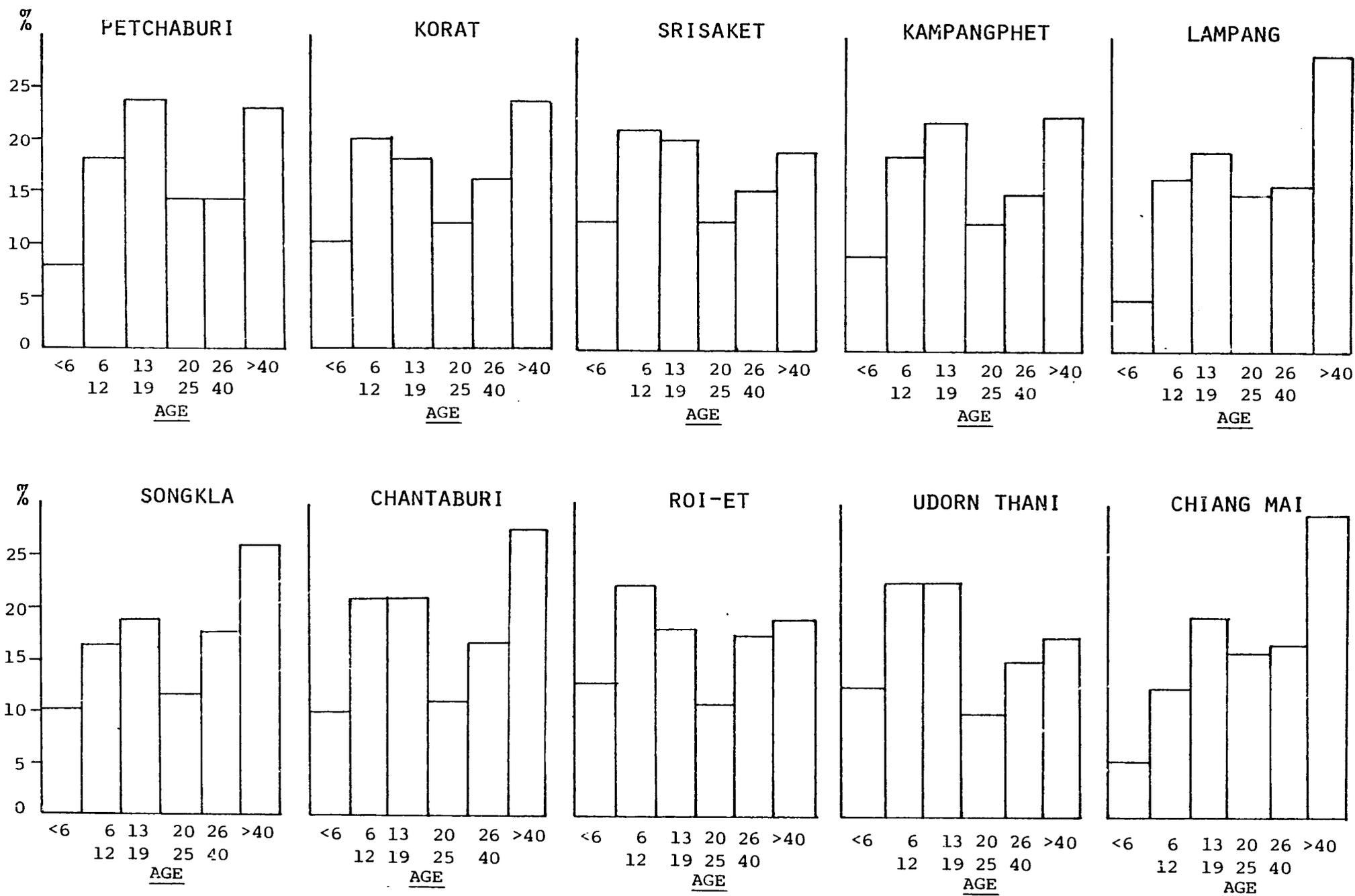
Table 1
Basic Statistics By Changwat
(PERCENTAGE OF HOUSEHOLD MEMBERS)

CHANGWAT	Age						Education *								Still in School	
	1-5	6-12	13-19	20-25	26-40	41	No response	1	2	3	4	5	6	Yes	No	
PETCHABURI	8.2	17.8	22.7	14.3	13.6	23.4	2.6	16.9	64.3	12.9	2.1	1.0	0.1	17.9	81.9	
KORAT	10.1	19.5	18.0	12.2	16.5	23.6	0.9	22.4	60.4	10.1	3.4	1.3	1.5	20.7	79.2	
SRI SAKET	12.1	21.2	20.3	12.2	15.3	18.9	0.1	25.4	59.5	12.8	1.3	0.5	0.1	22.4	77.5	
KAMPHANGPHET	9.0	18.7	22.1	12.4	15.0	22.7	0.3	22.9	62.9	9.6	3.1	0.9	0.4	21.7	78.3	
LAMPANG	5.0	16.6	19.0	15.0	15.9	28.5	0.1	19.5	56.0	12.3	7.2	3.4	1.4	22.5	77.0	
CHIANGMAI	5.5	12.2	19.5	16.3	16.8	29.6	0.4	16.3	62.0	11.9	5.7	2.2	1.5	20.3	79.4	
SONGKHLA	9.9	16.6	18.5	11.5	17.6	25.9	1.6	20.7	55.5	12.0	5.0	2.7	2.6	21.5	78.4	
CHIANTABURI	10.0	20.6	20.7	10.9	16.6	27.3	2.1	22.1	64.5	9.1	1.1	0.3	0.7	20.4	79.6	
ROI-E'T	12.7	21.8	17.8	11.1	17.8	18.7	0.5	17.0	66.5	11.5	2.3	1.9	0.3	24.5	75.4	
UDORNTHANI	12.5	22.5	22.5	10.2	14.9	17.5	0.1	18.7	66.0	9.7	4.0	1.5	0.1	24.6	75.4	

* 1. No School
2. P 1 - P 4
3. P 5 - P 7

4. MS 1 - MS 3
5. MS 4 - MS 6
6. Higher Education

Figure 1. Distribution by Age for Sample Population



3. Education

The level of education of the survey population was determined by asking the heads of households whether family members were still in school and what level of education they had reached (Table 1). The ratio of those still in school to those between the ages of 6 and 12 was highest in Chiang Mai, Lampang and Songkla and lowest in Roi-et, Srisaket, Petchaburi and Korat. The percentage of the survey population that had not attended school, when reduced by the percentage of population under 6, was highest in Lampang (15%), Kamphangphet (14%), and Srisaket (13%) and lowest in Roi-et (4%) and Udorn Thani (6%). The percentage of the population over 12 years old that stayed in schools past the seventh year was highest in Lampang (15%), Songkla (14%) and Chiang Mai (12%) and lowest in Srisaket (3%), Roi-et (3%) and Petchaburi (4%). It is difficult to determine the past trend in education in those provinces where migration was a significant factor in reducing the population educated above the fourth year. However, in terms of the available labor pool, the most highly educated populations appear to be in Lampang, Chiang Mai and Songkla, and the least educated in Srisaket, Roi-et and Petchaburi. Within each province, there are significant differences in education between survey villages, probably due to the proximity to schools and teachers.

4. Mobility

The head of each household was asked whether he or she had always lived in the village. The results in Table 2 point to a surprising mobility. The most stable populations were found in Chiang Mai, Songkla, Chantaburi, Petchaburi and Lampang where between 28% and 35% of the respondents had moved from other villages. The least stable populations were in Udorn Thani, Kamphangphet and Korat where between 54% and 67% had migrated to the village.

The reasons for this apparent mobility include the movement of the husband or wife following an inter-village marriage, the shortage of land in older villages, the opening up of new farm land, the establishment of new villages, and the subdivision of villages as they expand. This mobility can weaken the leadership within a village and contribute to the formation of groups within the village.

5. House Characteristics

The principal style of house constructed in Thailand is a wood house built on posts two to three meters high. More than two-thirds of the houses surveyed are of this design except in the provinces of Chantaburi, Songkla and Chiang Mai. In Chantaburi the houses are built on short posts which raises the house less than a meter off the ground. In Songkla the shortage of hardwood increased the price of wood houses to a level where the villagers have begun to construct brick houses. About half the houses in the sample are made of brick.

In Chiang Mai, wood houses on posts accounted for about 58% of those surveyed. The other styles are built on the ground. These include one

Table 2
HOUSEHOLD QUESTIONNAIRE
STYLE OF HOUSEHOLD
 (% of households)

<u>Changwat</u>	<u>HAVE YOU LIVED IN</u> <u>THE VILLAGE ALL</u> <u>YOUR LIFE</u>		<u>TYPE OF HOUSE</u>			
	<u>yes</u>	<u>no answer</u>	<u>wood</u> <u>above</u> <u>ground</u>	<u>wood,</u> <u>one story</u>	<u>wood,</u> <u>two story</u>	<u>other material</u> <u>or style</u>
Chiangmai	69.5	-	57.6	11.9	11.9	18.7
Songkla	72.6	1.7	44.7	15.1	5.6	34.6
Chantaburi	65.7	1.1	13.8	23.2	7.7	55.3
Roi-et	55.6	1.2	86.4	4.3	8.0	1.2
Udorn Thani	35.6	1.1	83.9	7.5	3.4	5.1
Petchaburi	66.7	-	70.8	20.3	5.2	3.6
Korat	43.9	-	84.2	3.1	8.2	4.6
Srisaket	58.3	0.5	77.9	12.1	7.5	2.5
Kampangphet	35.1	-	77.8	6.4	4.1	11.7
Lampang	72.1	-	68.7	11.9	6.0	13.4

and two story wood houses and two story houses with the concrete first floors. The two story houses have sleeping areas (upper floor) separate from the cooking and living area (lower floor). The substitution of concrete for wood in the fabrication of house posts is becoming common in most provinces due to the shortage of hardwood.

The size of the house was estimated by pacing the length and width of the structure. Of the total sample, about 45% are larger than 60 square meters and only 5% are 20 square meters or less (Table 3). The provinces with the largest houses are Udorn Thani, Korat, Kampanghet, Lampang and Chantaburi where 51%, 44%, 40%, 36% and 36%, respectively, of the houses are larger than 80 square meters. The smallest houses are in Chiang Mai, Songkla, Chantaburi and Srisaket where 37%, 33%, 30%, and 29% respectively are less than 40 square meters. These measurements refer to the outside dimension of the house. The actual floor space would be greater for two story houses.

6. Kitchens Characteristics

The size of the kitchen was also measured and the results are shown in Table 4. About 55% of the houses had kitchens 10 square meters or smaller. The largest kitchens are found in Songkla, Chantaburi and Petchaburi where 33%, 28% and 14%, respectively, are larger than 20 square meters. In Songkla the larger kitchens are located at the ground level and include space for the storage of food and rubber. In Chantaburi the larger kitchens are used for storing fuelwood. The smallest kitchens are found in Roi-et, Udorn Thani and Chiang Mai where 80%, 63% and 60% respectively of the houses have kitchens 10 square meters or less.

In Chiang Mai and Roi-et the kitchens are often located either beneath the house or in a separate structure. The data on the location of the kitchen is shown in Table 5. Only half the kitchens are located inside of the house, a third are attached to the house and the rest are located beneath or away from the house. The location of the kitchen may vary with season as some families move their cooking activities outside of the house when the weather is warm and dry. This may have affected some of the observations, however, the enumerators generally recorded the location of the permanent kitchen. In the first phase of the survey, the category "beneath the house" was recorded as "other".

7. Possessions

The survey households used a variety of energy-consuming equipment and appliances as shown in Table 6. Although the bicycle is the most common form of transportation, the number of motorcycles is significant. The highest rate of motorcycle ownership is in Chantaburi where the villages are relatively isolated from the main road. The relative prosperity of the villagers in Chiang Mai and Lampang is reflected in their high rate of motorcycle ownership. There is also a high rate of motorcycle ownership in Songkla. Not many households own larger vehicles. The highest ownership rates are in Petchaburi, Korat, Kampanghet, Chantaburi and

Table 3

SIZE OF HOUSE

(% of houses)

	SIZE (SQUARE METERS)					
	<u>≤ 20</u>	<u>21-40</u>	<u>41-60</u>	<u>61-80</u>	<u>81-100</u>	<u>101+</u>
<u>Changwat</u>						
Chiangmai	12.2	24.3	28.2	18.1	9.6	7.3
Songkla	12.4	20.1	29.6	18.4	11.2	8.4
Chantaburi	6.1	24.3	17.7	15.5	12.2	24.3
Roi-et	3.1	17.3	30.9	22.8	11.1	14.8
Udorn Thani	5.7	9.8	18.4	15.5	13.8	36.8
Petchburi	2.0	18.2	20.8	15.6	9.4	33.9
Korat	1.5	18.4	16.8	18.4	14.3	30.6
Srisaket	5.0	24.1	29.1	23.6	9.5	8.5
Kampangphet	1.8	17.5	24.6	16.4	12.9	26.9
Lampang	4.0	17.4	22.4	19.9	12.4	23.9

Table 4

SIZE OF KITCHEN
(% of houses)

<u>CHANGWAT</u>	SIZE (SQUARE METERS)					
	<u>1-5</u>	<u>6-10</u>	<u>11-15</u>	<u>16-20</u>	<u>21-40</u>	<u>>40</u>
Chiangmai	39.0	21.1	15.3	11.3	6.8	-
Songkla	9.5	30.7	19.0	8.4	28.5	4.0
Chantaburi	16.0	24.3	14.9	16.6	18.8	9.5
Roi-et	51.2	29.0	12.3	3.1	4.3	-
Udorn Thani	21.8	40.8	21.8	9.2	5.7	0.6
Petchaburi	8.9	36.5	22.9	14.6	13.5	1.0
Korat	9.7	46.9	18.4	8.7	10.2	0.5
Srisaket	20.1	36.2	15.6	9.5	6.5	1.0
Kampangphet	17.0	34.5	18.1	9.9	15.2	2.3
Lampang	17.4	39.8	19.9	8.0	11.4	1.5

Table 5

LOCATION OF KITCHEN

(% of houses)

	<u>IN HOUSE</u>	<u>ATTACH TO HOUSE</u>	<u>SEPARATE FROM HOUSE</u>	<u>BENEATH HOUSE</u>	<u>NO ANSWER/ OTHER</u>
<u>CHANGWAT</u>					
Chiangmai	45.8	32.2	19.2	0.6	2.3
Songkla	46.4	44.1	5.0	1.1	3.4
Chantaburi	23.8	50.8	15.5	-	9.9
Roi-et	43.2	30.2	2.5	8.6	15.4
Udon Thani	52.9	37.9	6.3	1.1	1.7
Petchaburi	47.4	45.3	2.6	-	4.7
Korat	55.6	32.1	1.5	-	10.7
Srisaket	50.3	26.6	8.5	-	12.6
Kam Langphet	72.5	13.5	0.6	-	13.5
Lampang	52.5	37.3	5.5	-	5.0

Table 5
Household Questionnaire :
Family Possessions

(% of Families Owning)

CHANGWAT ITEM	PETCHABURI	KORAT	SRISAKET	KAMPANGPHET	LAMPANG
ELECTRIC GENERATOR	6.3	4.1	0.5	2.9	7.5
CAR	5.2	2.0	0.5	-	3.0
MOTORCYCLE	21.9	9.2	2.5	29.2	41.8
BICYCLE	72.9	50.5	35.7	55.6	62.2
MOTOR BOAT	1.0	-	-	1.2	-
ROW BOAT	1.6	-	7.0	1.8	-
RADIO OR CASSETTE	93.8	84.7	78.9	90.1	79.1
TELEVISION	6.3	8.2	-	23.4	29.9
ELECTRIC FAN	1.6	15.8	-	38.6	42.8
REFRIGERATOR	-	3.6	-	10.5	13.4
SEW MACHINE	27.1	12.2	7.5	24.0	24.9
ELECTRIC IRON	2.6	17.3	-	31.0	39.8
CHARCOAL IRON	41.7	18.4	9.0	21.1	15.9
THERMOS	33.9	31.1	7.0	42.1	32.3
RICE STORE HOUSE	86.5	67.3	64.3	31.0	71.1
SMALL TRACTOR	27.1	15.3	0.5	31.0	3.5
LARGE TRACTOR	1.6	1.0	-	4.1	0.5
RICE MILL MACHINE	6.8	2.0	2.5	3.5	1.0
SPRAYER	34.9	3.6	10.1	12.9	6.5
HAND WATER PUMP	6.8	7.1	2.3	6.4	6.0
PLOUGH	95.8	88.3	98.5	96.5	84.1
WATER WHEEL	0.5	4.1	1.0	0.6	1.5
WATER SPRINKLER	1.6	-	1.0	1.8	0.5
THRESHING MACHINE	1.0	0.5	-	6.4	9.5
PICK UP TRUCK	14.1	5.1	1.0	9.9	1.5
ELECTRIC WATER PUMP	63.5	9.2	0.5	4.7	28.4
MINIBUS	0.5	3.1	-	0.6	1.0
ANIMAL CART	28.1	16.3	10.1	25.1	15.9
TRAILER	1.6	-	-	13.5	0.5
PUSH CART	43.8	14.3	15.1	0.6	4.0

Table 6 (cont'd)
Household Questionnaire :
Family Possessions
 (% of Families Owning)

CHANGWAT ITEM	CHIANGMAI	SONGKLA	CHANTABURI	ROI-ET	UDORNTHANI
ELECTRIC GENERATOR	-	1.1	7.2	-	-
CAR	2.3	-	1.7	-	0.6
MOTORCYCLE	41.2	44.1	40.9	14.2	9.8
BICYCLE	64.4	85.5	64.6	72.2	54.0
MOTORBOAT	-	-	12.2	-	-
ROW BOAT	0.6	0.6	3.3	0.6	0.6
RADIO OR CASSETTE	82.5	80.0	82.9	90.1	82.8
TELEVISION	13.6	12.8	2.8	-	10.3
ELECTRIC FAN	26.6	6.7	0.6	-	22.4
REFRIGERATOR	4.0	2.8	-	-	6.9
SEWING MACHINE	23.7	24.0	10.5	15.4	21.3
ELECTRIC IRON	30.5	15.1	1.1	-	23.6
CHARCOAL IRON	26.0	32.4	17.7	9.3	15.5
THERMOS	24.9	39.7	37.0	9.9	16.7
RICE STORE HOUSE	72.9	87.2	64.1	93.8	85.1
SMALL TRACTOR	2.8	12.8	14.9	-	2.9
LARGE TRACTOR	0.6	-	-	-	-
RICE MILL MACHINE	0.6	5.0	2.2	3.1	1.7
SPRAYER	19.8	7.8	2.2	53.1	3.4
HAND WATER PUMP	1.7	-	-	0.6	-
PLOUGH	84.2	87.7	93.9	96.9	94.3
WATER WHEEL	-	-	-	-	-
WATER SPINKIER	0.6	-	3.3	-	0.6
THRESHING MACHINE	-	-	-	1.9	-
PICK UP TRUCK	0.6	-	5.5	2.5	4.6
ELECTRIC WATER PUMP	20.9	8.4	28.2	4.9	0.6
MINIBUS	1.7	-	0.6	-	1.7
ANIMAL CART	18.1	-	14.4	15.4	31.6
TRAILER	1.1	-	0.5	-	0.6
PUSH CART	4.0	16.2	1.1	63.0	35.1
OTHER ENGINE, KUBOTA	0.6	-	12.7	0.6	2.9
RICE MILL, ELECTRIC OR DIESEL	0.6	1.1	3.3	2.5	1.1

Udon Thani where 20%, 10%, 11%, 8%, and 7% of the households respectively, own a car, pickup truck or minibus.

The ownership of water pumps varies with the availability of water. Most wells are used for drinking and a bucket is lowered down to gather the water. In Petchaburi, where the water table is low and electricity available, 64% of the households have electric or diesel water pumps. Similar conditions exist in Lampang, Chantaburi and Chiang Mai and about one-fourth of the households have electric or diesel pumps.

Most of the households own either a radio or radio/cassette recorder. Ownership varies from 79% in Srisaket and Lampang to 94% in Petchaburi. Fewer families own televisions due to the higher cost, availability of electricity, and the quality of reception in the village. The villages in Srisaket have no televisions because of the lack of electricity, the distance from the transmitter and the relative poverty of the villagers. In Lampang and Kamphangphet the villages are located near the transmitter and many households have electricity, so that about one-fourth of the families own televisions. The ownership rate in Chiang Mai and Songkla is about 13%. The conditions there are similar to Lampang and Kamphangphet.

Electric fans are relatively common in Kamphangphet, Lampang, Chiang Mai and Udon Thani where the villages have electricity. Refrigerators are not common except in these four provinces. The ownership rates ranged from 4% in Chiang Mai to 13% in Lampang. Clothes irons are owned by about 50% of the households in all provinces except Srisaket and Roi-et. Electric irons are most common in the four provinces previously mentioned, while charcoal irons are more prevalent in the others.

Thermos bottles for storing hot water can provide significant savings in energy for houses which use hot water. The data on water boiling activities indicate that this is not a common activity since neither tea nor coffee is widely consumed, however, the ownership rate for the thermos bottles is quite high. About one-third of the households, in all provinces except Srisaket and Roi-et own a thermos bottle.

The cost of tractors, either small hand-tractors or large riding-tractors, is quite high relative to the income of most villagers. Ownership rates vary not only with family wealth, but also with the type of agriculture and soil. Tractors are especially popular in areas where sugar and cassava are grown. For provinces such as Petchaburi and Kamphangphet, the tractor has replaced the buffalo for land preparation. Tractors are also widely used in Korat, Songkla and Chantaburi.

Small rice mills are used in most rural areas. A village usually has a few family-owned units for milling rice for local consumption. The ownership rates vary from 1% in Chiang Mai and Lampang, which are near urban centers, to 7% in Petchaburi and 6% in Songkla and Roi-et.

A comparison of the survey data on household possessions with similar data collected in the National Energy Administration's Survey, Table 7, shows the latter has higher response rates in all provinces except Petchaburi. This discrepancy is explained partly by the selection of different villages but more importantly by the difference in approach.

Table 7
HOUSEHOLD POSSESSIONS BY CHANGWAT
(NEA SURVEY DATA - PRELIMINARY)

PROVINCE	PROVINCE'S CODES	RADIO	T.V.	REFRIG- ERATOR	ELECTRIC FAN	ELECTRIC IRON	ELECTRIC COOKER	ELECTRIC PAN	TRANSISTOR RADIO	CHARCOAL IRON
SONGKHLA	140110602	8	13	3	11	11	6	1	55	18
CHANTHABURI	230110402	3	6	0	3	6	0	0	n.a.	30
PETCHABURI	260110102	16	40	26	50	60	30	0	83	6
SRISAKET	320110802	0	0	0	2	1	0	0	82	6
NAKORNHRATCHA- SIMA	330110602	3	3	0	6	10	4	1	87	12
ROI-ET	350111202	0	1	2	3	3	0	0	77	10
KAMPANGPHET	430110502	1	5	1	3	2	2	1	88	3

n.a. - not available

The NEA survey was conducted by a mobile team which represented the central government. It is logical that the villagers would underestimate their ownership of visible assets.

8. Land Tenure

The heads of households were asked to inventory the land which they controlled through various tenure arrangements. The tenure arrangements included owning, renting for cash, renting for a share of the crops, free land and "other" forms of tenure. The latter two include publicly and privately held land which the farmers have cultivated over a period of years. Free land also includes land which parents allow their children to farm, usually after they are married. As the ownership of the land is held by the parents, the children refer to the land as free land.

The distribution of land ownership is shown in tabular form in Table 8 and in Figure 2. The percentage of families not owning land is greatest in Chiang Mai (31%), followed by Lampang (25%), Korat (25%), Srisaket (20%), Kampanghet (19%), Chantaburi (15%) and Udorn Thani (15%). These figures are considerably higher than those of the National Statistical Organization presented in Table 9. This difference may be due to the structure of the survey question which distinguished owned land from cash rental, share cropping, free tenure, and other. In all of the provinces, government land is one of the types of land that villagers use for agriculture. In some of the provinces this land is referred to as "owned" land because the villagers have cultivated the land for a long period. In other provinces, especially where insurgent activity has caused the government to reassert its ownership rights in the recent past, the villagers refer to the land as free or "other" land even though they have cultivated it for many years. The distribution of responses regarding the type of tenure is shown in Table 10 for each province.

In Petchaburi, most of the villagers own land. The average holding is 24 rai (1 rai = .4 acres = .16 hectare). Over half the families own between 16 and 50 rai and about 10% own more than 50 rai. Of the other forms of tenure, about one-sixth of the households indicate that they sharecrop. The average area sharecropped is 10 rai. About 18% indicate that they hold land under "other" arrangements. This refers primarily to public land which the villagers have to pay tax for using. The average amount of land held under this arrangement is 12.5 rai. The land area controlled by the households frequently includes a large area in the river bed which is planted only in the dry season.

In Korat, three-fourths of the households own land and the average holding is 24 rai. This is the same value as for Petchaburi, but the distribution is less concentrated. Only one-third of the households own between 16 and 50 rai. The other common form of tenure is free land which is untaxed public land. About one-sixth of the households control free land with an average area of nine rai. Slightly larger tracts were rented, but only by eight percent of the households.

In Srisaket, four-fifths of the households own an average of 25 rai, however, this distribution is somewhat skewed with one third of the land

Table 8
Amount of Land Owned Per Household by Changwat
 (Percentage of Households)

Changwat	Amount of Land (RAI)											Ave
	None	1-3	4-6	7-9	10-12	13-15	16-20	21-30	31-50	51-100	101 and More	
Petchaburi	3.1	3.1	9.4	7.3	7.3	9.4	16.1	19.3	18.2	9.6	0.5	24
Korat	25.0	3.6	7.7	5.6	14.3	5.6	12.2	13.8	6.6	4.1	1.5	24
Sisaket	19.6	1.5	4.5	9.5	11.6	4.5	7.0	16.1	20.6	5.0	-	25
Kampangphet	19.3	1.2	5.3	2.9	5.8	1.8	8.8	11.1	18.7	19.9	5.3	44
Lampang	25.4	22.4	26.9	9.5	6.5	4.0	1.5	2.0	1.5	0.5	-	7
Chiangmai	31.1	22.0	23.7	9.6	5.6	7.3	0.6	-	-	-	-	6
Songkla	7.8	5.6	12.3	9.5	7.8	10.1	12.8	21.8	8.9	3.4	-	18
Chantaburi	14.9	10.5	12.7	10.5	8.3	6.6	9.4	9.4	11.0	6.6	-	19
Roi-Et	4.3	1.2	2.5	4.9	13.6	10.5	13.6	22.2	24.1	1.9	1.2	24
Udonrthani	15.5	1.7	5.7	2.9	6.3	5.2	13.2	19.0	17.2	10.3	2.9	32

Figure 2. Distribution of Land Ownership by Changwat

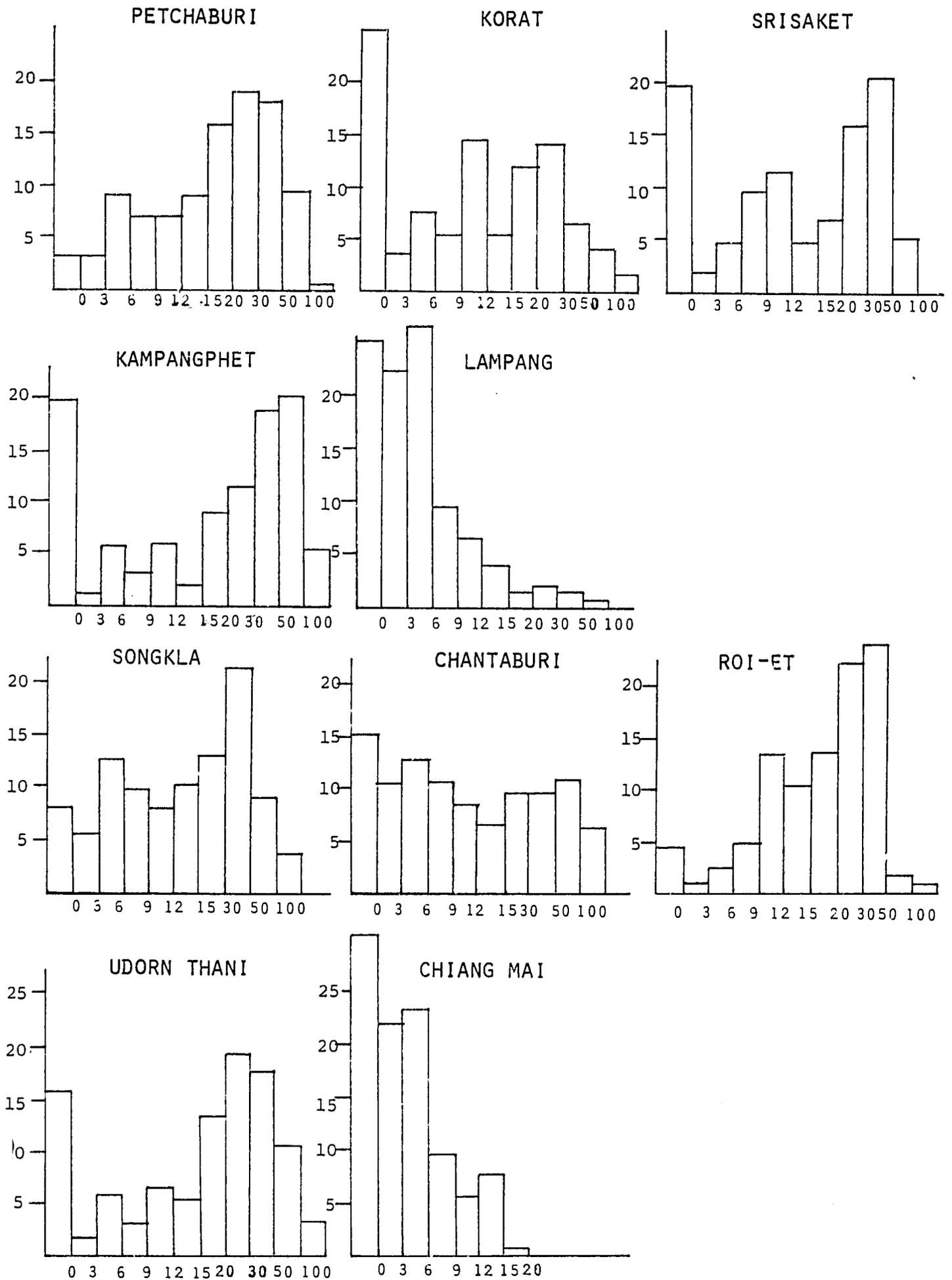


Table 9
LAND OWNERSHIP - NSO DATA

AREA	TOTAL NUMBER OF HOLDINGS	LAND LESS (%)	OWN LAND (%)	RENT LAND (%)	RICE FARMING (%)	TREE FARMING (%)	TOTAL AREA OF HOLDINGS	AVERAGE LAND OWNED BY OWNERS	AVERAGE LAND RENTED BY RENTERS	AVERAGE RICE AREA CULTIVATED BY RICE FARMER	AVERAGE TREE GROWING AREA FOR TREE FARMERS
SOUTHERN REGION	564,543	0.57	97.06	7.90	74.38	23.61	11,017,321	19.7	16.8	19.0	21.6
NORTHERN REGION	1,004,303	1.31	88.26	16.57	83.24	22.11	19,942,423	21.1	22.9	20.4	7.6
NORTHEASTERN REGION	1,660,172	0.78	97.02	3.73	91.66	0.46	40,508,417	24.7	26.0	25.2	7.1
CENTRAL REGION	789,409	2.34	80.76	28.33	64.91	10.86	21,998,039	29.0	32.8	30.8	12.5
KORAT	184,042	1.01	93.78	7.88	99.67	0.88	5,415,555	30.1	28.4	30.4	11.8
SRISAKET	121,575	0.42	98.73	2.09	94.73	0.28	2,607,739	21.5	26.0	21.7	5.7
KAMPANGPHET	57,966	0.74	89.61	14.28	70.55	1.97	1,923,193	33.0	35.1	36.1	9.0
LAMPANG	73,357	1.4	93.92	10.58	93.18	1.44	569,221	7.9	9.2	7.9	6.8
CHANTHABURI	28,521	0.75	97.4	4.50	34.31	36.47	717,212	25.5	25.4	25.0	20.8
ROI-ET	123,803	0.48	98.66	2.98	97.54	0.28	2,928,150	23.8	27.8	24.1	5.1
UDORNTHANI	139,396	0.85	96.47	3.33	91.09	0.55	3,708,265	27.0	23.9	27.8	6.5
CHIANGMAI	113,562	1.68	80.79	25.42	85.95	4.39	878,129	7.9	8.5	8.1	8.4
NAN	45,102	0.67	98.03	4.98	94.86	0.62	379,436	8.4	9.5	8.9	46.5
BURIRUM	109,756	0.83	96.62	5.36	92.24	0.75	3,026,470	28.0	27.9	28.7	4.5
SONGKHLA	80,592	0.56	95.81	10.19	81.20	17.49	1,474,327	18.6	15.0	16.6	27.1

Table 10

Percentage of Households Possessing Land
Under Various Tenure Arrangements

Changwat	Control of Land (Percentage of Household)				
	Own-Land	Rent Land	Sharecrop	Free Land	Other
Petchaburi	96.9	4.2	16.7	8.9	17.7
Korat	75.0	8.2	9.2	15.8	3.6
Srisaket	80.4	4.0	5.5	14.6	6.0
Kampangphet	80.7	24.0	8.8	11.1	2.9
Lampang	74.6	1.5	10.0	5.5	22.9
Chiang Mai	68.9	10.7	10.2	4.5	22.6
Songkla	92.2	16.8	5.1	20.7	15.0
Chantaburi	85.1	6.1	12.7	27.1	-
Roi-Et	95.7	0.6	1.9	6.8	6.8
Undorn Thani	84.5	3.4	10.9	16.7	6.3

owners possessing between 30 and 100 rai. This size of holding is necessary for subsistence since the yields are relatively low. As in Korat, about one-sixth of the households control some free land, but the average holding under this arrangement is 14 rai.

In Kamphangphet, the ownership pattern is more skewed than in the previous provinces. Although the average holding among land owners is the highest for any province, 44 rai, about one-fifth of the households have no land. On the other hand one-fourth of the households have more than 50 rai. The large areas are used either for the planting of upland crops, especially cassava and sugarcane, or for the grazing cattle. The unequal distribution of land resulted in about one-fourth of the households renting an average of 16 rai.

In Lampang, the shortage of land is relatively acute. About one-fourth of the households have no land, while about half have six rai or less. For those owning land, the average holding is only seven rai. Public land and "other" tenure arrangements are used by 23% of the households, but the average land area available is only 8 rai.

In Songkla, only 8% of the households have no land and the average holding is 18 rai. Forty-four percent of the households have holdings between 16 and 50 rai. About 21% of the households indicate that they control free land. The average area under this tenure arrangement is only four rai. "Other" tenure arrangements were mentioned by 15% of the households and these provide an average of 7 rai.

The ownership of land in Chantaburi is quite varied. The average holding for the 85% of the households with land is 19 rai, however, 23% have less than 6 rai, another 25% have between 7 and 15 rai, 19% have between 16 and 30 rai, and 18% have between 31 and 50 rai. The other significant land tenure is free land which is available to 27% of the households and amounted to an average of 7 rai. This refers primarily to large tracts of land bought for animal raising or speculation by outsiders who allow the villagers to use the land.

The pattern of land ownership in Roi-et is similar to that in Petchaburi. All but 4% of the households have land and the average holding is 24 rai. As the agricultural yields are low, half the households have holdings in excess of 20 rai. Other forms of land tenure are not significant in Roi-et.

In Udorn Thani, about 15% of the households own no land while about 63% of the households have holdings in excess of 15 rai. The average holding is 32 rai. Other significant forms of tenure are free land and share-cropping. The former is used by one-sixth of the households to obtain an average of 15 rai and the latter is used by one-ninth of the households to obtain an average of 11 rai.

The shortage of land is most acute in Chiang Mai where nearly a third of the households own no land. The houses that do own land only have an average of 6 rai and only 14% of the households own more than 9 rai. In order to increase the land controlled by the household, 11% of the households rent land, 10% sharecrop and 23% use "other" tenure arrange-

ments. The latter is significant because security problems have caused the government to reassert its right over the public land holdings on which the villagers have encroached. The average holdings under the three arrangements are relatively small, 3, 5 and 4 rai respectively.

The survey data on land ownership produced results similar to those gathered by the National Statistics Organization for the whole province, except for Kamphangphet, where the survey data is considerably higher due primarily to the inclusion of one village which have large herds of cattle, and Chantaburi, where the survey data is considerably lower since it includes fishing villages which do not possess extensive orchards.

The information on land ownership and tenure is broken down by Village in Table A-1.

The need for land to grow food is explored in some detail by asking the head of a household about the present requirements of his family and the future requirements of his children. A summary of the findings is presented in Table 11. The need for more farmland was expressed by 44% of the households in Petchaburi, 50% in Korat, 55% in Srisaket, 40% in Kamphangphet, 38% in Lampang, 24% in Songkla, 42% in Chantaburi, 32% in Roi-et, 40% in Udorn Thani and 29% in Chiang Mai. Since the question regarding the need for land is asked without any conditions on how additional land would be obtained, these percentages represent an upper limit. However, the follow-on question, "In the future will your sons and daughters inherit enough land to grow food for their families," produced significantly higher percentages reflecting the very real concern of the villagers. The need for more land in the future was expressed by 81% of the households in Petchaburi, 82% in Korat, 86% in Srisaket, 80% in Kamphangphet, 70% in Lampang, 67% in Songkla, 74% in Chantaburi, 71% in Roi-et, 88% in Udorn Thani and 61% in Chiang Mai.

It is difficult to draw any comparisons between the provinces, since the emphasis placed on this question varied with different survey teams. However, the relatively low level of concern in Chiang Mai and Lampang may be due to the increasing yields, the growing commercial activity in the region and the continuing migration to the urban areas. The relatively high level of concern in Srisaket and Korat reflects the very real problems the villagers in these areas face in conducting a subsistence agriculture. Roi-et has a somewhat similar problem, but the villagers have a higher standard of living and this is reflected in their attitude about the need for additional land. In Udorn Thani, the need for more land is probably due to increasing emphasis on upland crops. In Songkla, the large areas planted with rubber provide a buffer for the future, and the nearby urban center of Had Yai provides alternate employment. The villages in Petchaburi have a marginally higher standard of living than in Srisaket, Korat and Udorn Thani, but they are still feeling the stress of producing enough crops from their land holdings.

When the villagers are asked about whether they could obtain additional land and how they would obtain it, their responses revealed the difficulty of their position. Most did not think they could obtain more land. This opinion was expressed by 65% of the villagers in Petchaburi, 74% in Korat, 79% in Srisaket, 47% in Kamphangphet, 71% in Lampang, 78% in

Table A.1
AVERAGE LAND AREA AND TENURE IN THE SURVEY VILLAGES

CHANGWAT	VILLAGE	HOUSE- HOLDS	OWN		CASH RENTAL		SHARE CROP		FREE		OTHER	
			HSGLD	AVE RAI	HSGLD	AVE RAI	HSGLD	AVE RAI	HSGLD	AVE RAI	HSGLD	AVE RAI
PETCHABURI	MAE PRACHAN(1)	40	38	26.3	1	15.0	2	18.0	2	8.0	2	12.0
	MAE PRACHAN(2)	40	40	25.6	3	4.0	10	7.3	2	4.5	5	15.2
	WANG KRAI	37	36	26.6	2	10.5	13	11.3	5	3.8	12	14.0
	NONG KRATOOM	35	34	20.0	2	4.0	6	7.8	7	15.1	13	10.2
	THAHUALOB	40	38	20.5	-	-	1	5.0	1	4.0	2	13.5
KORAT	NONG SALA	40	29	17.2	4	12.5	3	6.0	9	9.2	1	14.0
	NON LEUM	37	29	28.4	5	16.2	3	6.0	6	8.0	5	2.0
	NON NGUE	40	30	30.0	5	10.0	3	6.3	3	5.6	1	20.0
	SRA NOI(1)	39	30	29.2	1	9.0	3	6.6	7	9.1	-	-
	SRA NOI(2)	30	29	14.2	1	6.0	6	10.8	6	10.8	-	-
SRISAKET	BAN KWAO	40	32	24.8	2	10.0	1	20.0	15	17.0	2	12.5
	BAN KOK	40	31	25.2	-	-	3	32.3	10	11.9	4	9.0
	BAN PRAN	40	30	23.1	5	19.4	3	21.3	-	-	-	-
	MAIKAEN- SANGKAN	40	29	13.1	1	10.0	3	10.3	-	-	3	9.0
	BAN PONG	40	38	34.1	-	-	1	14.0	4	7.2	3	39.0

Table A.1 (cont'd)
AVERAGE LAND AREA AND TENURE IN THE SURVEY VILLAGES

CHANGWAT	VILLAGE	HOUSE- HOLDS	OWN		CASH RENTAL		SHARE CROP		FREE		OTHER	
			HSILD	AVE RAI	HSILD	AVE RAI	HSILD	AVE RAI	HSILD	AVE RAI	HSILD	AVE RAI
KAMPANGPHET	PREUK MAKRUJ	34	22	27.5	13	18.0	-	-	7	10.5	-	-
	HUATUNGNOI	20	14	40.7	6	20.1	-	-	3	14.6	-	-
	WANG CHA PLU	38	33	60.2	7	14.3	3	6.7	2	20.0	-	-
	BO-TUM	39	36	48.3	8	9.0	7	21.4	6	16.8	4	28.2
	HAT CHA-OM	40	33	33.3	7	16.4	5	12.4	1	13.0	1	6.0
LAMPANG	MAI PUNG	40	33	5.0	-	-	1	1.0	-	-	21	4.2
	LAI HIEN	40	34	8.3	1	6.0	-	-	5	4.8	20	12.0
	SALADONGLAN	40	25	6.0	-	-	7	7.7	3	1.6	1	2.0
	RAI NANOI	40	21	7.8	-	-	8	11.6	2	3.5	2	3.0
	BAN PAO	41	37	9.2	2	1.5	4	10.5	1	20.0	2	7.0
CHIANGMAI	MAE HO PHRA	33	23	7.8	12	3.16	2	2.0	5	2.0	9	5.0
	KHEELEKLUANG	36	30	6.3	3	2.6	-	-	-	-	4	7.5
	SANPATUNG	36	22	5.6	1	1.0	6	4.6	1	2.0	14	3.2
	BAN HONG	36	17	4.6	3	3.33	5	6.6	2	3.5	3	1.3
	TONG GUY	36	30	5.86	-	-	5	6.4	-	-	-	-

Table A.1 (cont'd)
AVERAGE LAND AREA AND TENURE IN THE SURVEY VILLAGES

CHANGWAT	VILLAGE	HOUSE- HOLDS	OWN		CASH RENTAL		SHARE CROP		FREE		OTHER	
			HSULD	AVE RAI	HSULD	AVE RAI	HSULD	AVE RAI	HSULD	AVE RAI	HSULD	AVE RAI
SONGKHLA	PA CHING	36	33	17.3	7	5.6	2	4.0	15	3.7	10	5.2
	TUNG PHRA	35	34	15.2	6	3.16	1	7.0	4	5.7	2	14.0
	PA PLU	36	35	19.0	10	3.4	-	-	3	3.3	9	6.7
	TRAI KHUNG	36	32	18.4	6	3.8	2	3.5	4	6.0	6	8.6
	CHAI NA	36	31	21.1	1	4.0	1	2.0	11	3.6	11	5.8
CHANTHABURI	YANG RAHONG	37	34	19.5	3	3.3	1	5.0	12	8.0	-	-
	NAZA	36	26	14.7	1	16.0	7	9.4	5	5.2	-	-
	BAN GROOK	36	36	25.5	4	2.75	6	6.3	12	6.4	-	-
	KLONG BON	36	32	21.1	2	7.0	5	2.6	2	6.0	-	-
	PAKTAPON	36	26	9.6	1	12.0	4	4.0	18	8.3	-	-
ROI-ET	NONGWAENGYAO	36	34	28.0	-	-	-	-	3	6.0	1	13.0
	PA NAIR	18	18	30.2	1	13.0	2	11.0	1	7.0	-	-
	PA WER	36	34	22.9	-	-	-	-	1	5.0	10	2.2
	BAN KLUAY	36	35	20.1	-	-	-	-	4	2.7	-	-
	BAN KO	36	34	23.7	-	-	1	10.0	2	3.5	-	-

Table A.1 (cont')
AVERAGE LAND AREA AND TENURE IN THE SURVEY VILLAGES

CHANGWAT	VILLAGE	HOUSE- HOLDS	OWN		CASH RENTAL		SHARE CROP		FREE		OTHER	
			HSULD	AVE RAI	HSULD	AVE RAI	HSULD	AVE RAI	HSULD	AVE RAI	HSULD	AVE RAI
UDORNTHANI	NONGBUADAENG	36	33	35.6	1	30.0	2	15.0	6	10.2	-	-
	BAN KAWUA	36	31	44.5	2	5.0	3	21.0	3	36.6	1	68
	BAN MEN	34	32	19.9	1	3.0	4	10.5	1	8.0	-	-
	SAMKASANTISUK	34	29	29.2	-	-	4	13.5	9	10.9	2	7.5
	SRICHIANGMAI	34	22	29.8	2	3.5	6	3.3	10	15.2	8	18.6

Table 11

Household Survey: Need for Land

Changwat	Village	(Number of Households)																	
		have enough farm land			have enough for the future			can obtain more land			How can obtain more land				Average cost of land (1000B /rai)				
		% yes	% No	% No Response	% yes	% No	% No Response	% yes	% No	% No Response	% Res ponding	Average Amount of land for those responding			Padi	Upland	Orchard	House hold	
Buy	Rent	Virgin	Other																
Petchburi	1	56	39	5	10	85	5	31	59	10	31	7.2	20	12.3	-	9.2	9	9.4	14.7
	2	50	50	-	20	80	-	8	93	-	9	2	5	-	-	4.9	5.6	9.4	10.8
	3	31	69	-	21	79	-	18	67	15	18	8	5	16.7	-	6.7	8	12.5	14
	4	71	29	-	18	82	-	50	50	-	50	12.8	-	11.6	-	5.3	6.6	7.7	11.1
	5	65	33	2	20	78	2	28	58	14	28	16.1	-	22.3	-	6.3	8.4	9.2	15.9
Korat	1	55	35	10	10	80	10	8	83	9	8	15	-	-	-	9.4	1.8	-	8.3
	2	35	63	2	8	90	2	23	70	7	23	20.5	-	500	-	9.8	.9	2.3	7.3
	3	48	48	4	10	85	5	18	75	7	18	2	-	7.5	-	10.6	10.6	11.9	12
	4	40	48	12	5	80	15	5	83	12	5	30	20	-	-	16.4	16.4	11	31.9
	5	23	55	22	3	75	22	13	60	27	13	7	-	13.3	-	14.1	3.9	10.1	20.1
Srisaket	1	60	40	-	15	85	-	43	58	-	43	22	8.7	-	-	2.3	1	4.3	5
	2	38	62	-	8	92	-	10	88	2	10	10.8	-	-	-	2.1	-	2.1	8.7
	3	43	57	-	18	82	-	10	88	2	10	15.3	20	-	-	3.9	1.5	3.3	8.4
	4	23	77	-	55	95	-	13	87	-	13	8.5	-	3	-	2.1	-	-	4.1
	5	62	38	-	23	77	-	26	74	-	26	21.1	14	-	-	2.7	-	3	6.3
Kampangphet	1	53	40	7	18	75	7	35	55	10	35	19	17.3	-	-	4.3	4.5	4.3	10.4
	2	55	45	-	20	78	2	68	25	7	68	20.5	11.8	-	-	1.7	.9	3	2.2
	3	55	45	-	16	82	2	55	45	-	55	30	13.3	-	-	2.2	1.8	1.8	4.8
	4	73	27	-	20	80	-	48	50	2	48	26.1	17	-	-	2.9	1.6	-	19.7
	5	46	44	10	15	75	10	39	56	5	39	19.1	-	-	-	7.5	9.1	10.1	14.8

Table 11 (cont'd)
Household Survey : Need for Land
(Number of Households)

Changwat	Village	have enough farm land			have enough for the future			can obtain more land			How can obtain more land				Average cost of land (1000B/rai)				
		% yes	% No	% No Response	% yes	% No	% No Response	% yes	% No	% No Response	% res ponding	Average Amount of land for those responding			Padi	Upland	Orchard	Household	
		Buy	Rent	Virgin	Other														
Lampang	1	53	43	4	10	88	2	25	75	-	25	4	-	1.9	2	15.8	.1	5.5	9.5
	2	63	30	7	20	73	7	38	55	7	38	12.8	-	5.1	-	17.8	4	47	3.8
	3	35	33	32	25	43	32	8	78	14	8	-	-	2.5	3	11.9	6.1	16	51.6
	4	38	58	4	78	78	4	20	78	2	20	3.3	-	10	-	10.8	-	147	13
	5	70	28	2	33	65	2	33	67	-	33	6	-	5.2	7.5	9.8	3.9	5.7	12.2
Songkla	1	81	19	-	19	72	9	25	58	17	25	7	5	-	5	10.9	-	1	15.3
	2	88	12	-	41	53	6	6	91	3	6	2.5	-	-	-	6.4	5.7	6.1	8.7
	3	72	28	-	19	81	-	8	92	-	8	6	-	-	-	12.8	10	11.9	16.1
	4	74	23	3	23	63	14	31	63	6	31	7.4	6.3	-	-	9.6	6	12.5	12.8
	5	53	39	8	25	67	8	6	86	8	6	7.5	-	-	-	10.9	10	11.6	19.8
Chantaburi	1	51	43	6	30	65	5	19	73	8	19	7.5	-	18.8	-	3.4	3.1	5.9	4.3
	2	28	53	19	14	67	19	17	72	11	17	13.7	-	-	-	5.9	2.1	7	10.5
	3	65	35	-	22	78	-	8	92	-	8	5	-	-	-	6.2	6.1	11.1	10.4
	4	47	47	6	14	78	8	22	70	8	22	22.4	-	5.3	-	7.4	4.8	15.9	6.1
	5	57	31	12	9	80	11	20	71	9	20	13.5	-	6.7	-	7	3.7	10	9.8
Roi-et	1	78	19	3	28	69	3	44	50	6	44	7.9	-	2	-	5.9	5	6.1	8.4
	2	72	28	-	39	56	5	28	72	-	28	8.3	10	-	-	5.1	5	6.1	5.8
	3	74	26	-	34	66	-	11	89	-	11	10	-	-	-	8.8	10	8.3	8.5
	4	39	58	3	19	78	3	17	78	5	17	26.7	5	-	-	10.1	3.1	8.3	10.1
	5	69	31	-	14	86	-	17	83	-	17	11.6	10	-	-	7.2	-	8.6	11.8

Songkla, 75% in Chantaburi, 74% in Roi-et, 58% in Udon Thani and 62% in Chiang Mai. The majority of those who said they could obtain additional land thought in terms of buying more. Renting is also an important opinion in Srisaket, Kampanghet, Roi-et, Udon Thani and Chiang Mai. Opening up virgin land is an option in Petchaburi, Korat, Lampang, Udon Thani and Chiang Mai. The cost of land in the provinces reflect the quality of the agriculture. Srisaket, Kampanghet and Udon Thani have the lowest prices per rai for agricultural land, while Lampang and Chiang Mai have the highest prices.

Despite the shortage of agricultural land, many households possess land which is not farmed. The amount of land not used was discussed in the Phase II questionnaire and the results are shown in Table 12. Most of the land was not suitable for agriculture because of lack of water. The amount of unused land was considerable in Songkla, Chantaburi and Udon Thani.

9. Household Responsibilities

The division of labor within a household is determined by asking the members of the household if they took part in certain activities. The household members are grouped by age and sex and the percentage within each group participating in an activity has been listed in Tables 13.1 to 13.10. Some general observations can be made from this data. First, many of the duties including the agricultural activities and the gathering of fuel and water involve both men and women. The women have the largest responsibility for child raising, cooking and housework. For children between 6 and 12 the major activities are child care, housework, animal husbandry and carrying water. Adults over 40 participate in agricultural activities and fuel collection, although at a slightly lower rate than between 20 and 40.

In Petchaburi caring for children is largely the responsibility of women 20 years or older, especially those between 27 and 40. The housework is primarily the responsibility of the women although boys* also participate. About two-thirds of the women between 13 and 40 indicate that they take part in housework, as well as one-half of the women over 40 and the girls between 6 and 12. The agricultural activities that create the heaviest demand for labor, e.g. land preparation, planting and harvesting, are undertaken by both men and women. About half the men between 13 and 19, and three-fourths of those 20 or older participate in these activities. The participation rate for women is the same for planting and harvesting and only slightly less for land preparation.

The participation rates for plant care and threshing are lower because the labor requirements are not as intense. The age group between 27 and 40 have the highest participation rate followed by those 19 to 26 and over 40. For men the rate is more than 60%, while for women the rate is closer to 50%.

Most fuel is collected by men and women over 19 years of age. The participation rate for men averages about 58%, whereas for women the average is closer to 43%. For obtaining water the reverse is true, the

Table 12
Reasons for Unused Land by Village
(Number of Households)

Changwat	Village	Percentage having unused land	land not used for agriculture								
			Average Total land /rai	Non-agricultural				Reasons for not using*			
				1	2	3	4	1	2	3	4
Songkla	1	28	5.3	6	4	-	-	4	4	-	2
	2	29	4.6	10	-	-	-	7	1	2	-
	3	39	6.3	6	2	6	-	7	6	-	1
	4	17	4.4	5	1	-	-	2	4	-	-
	5	31	7.8	11	-	-	-	-	5	1	5
Chantaburi	1	24	9.7	6	2	1	-	-	6	-	3
	2	6	5.5	1	-	-	1	-	1	-	1
	3	16	10	6	-	-	-	1	5	-	-
	4	31	7.9	10	1	-	-	-	8	-	3
	5	29	4	6	-	-	-	2	4	-	-
Roi-et	1	8	2.8	3	-	-	-	-	3	-	-
	2	22	15	1	1	2	-	-	4	-	-
	3	9	2.7	2	-	1	-	1	2	-	-
	4	8	2.2	3	-	-	-	1	1	-	1
	5	-	-	-	-	-	-	-	-	-	-
Udon Thani	1	41	11.8	13	2	-	-	13	-	-	2
	2	44	12.3	15	1	-	-	1	15	-	-
	3	34	9.4	9	-	3	-	12	-	-	-
	4	53	9.4	16	1	1	-	-	14	4	-
	5	18	32.8	4	1	1	-	6	-	-	-
Chiangmai	1	6	1	2	-	-	-	-	1	1	-
	2	-	-	-	-	-	-	-	-	-	-
	3	6	2.3	2	-	-	-	-	-	-	1
	4	3	1	1	-	-	-	1	-	-	-
	5	3	1	1	-	-	-	1	-	-	-

- | | |
|--|--|
| <p>+ 1. not to be advantageous</p> <p>2. graze animals</p> <p>3. fuel (wood, charcoal)</p> <p>4. for renting</p> | <p>* 1. Water problem (flood waters, water shortage)</p> <p>2. the land not cleared</p> <p>3. capital problem (shortage, not to be worthwhile)</p> <p>4. no reason</p> |
|--|--|

Table 13.1

Responsibilities By Age and Sex for Petchaburi
(Percentage of Household Members in the Age Group)

	SEX		MALE					FEMALE						
	AGE		1-5	6-12	13-19	20-26	27-40	41+	1-5	6-12	13-19	20-26	27-40	41+
TOTAL			43	107	135	90	75	127	53	100	128	78	84	147
CHILD CARE			2	9	2	2	9	9	1	11	16	24	46	20
HOUSEWORK			2	21	13	8	12	9	-	49	62	65	63	46
LAND PREPARATION			0	3	50	74	81	76	-	4	38	54	64	46
PLANTING			2	5	55	89	81	72	-	6	62	78	88	67
PLANT CARE			0	1	28	53	71	66	-	3	36	41	69	52
HARVESTING			0	6	54	84	76	70	-	7	65	81	86	68
THRESHING			0	1	24	56	55	46	-	4	34	36	46	35
ANIMAL HUSBANDRY			2	15	32	19	20	30	4	19	24	28	37	29
FISH RAISING			-	-	-	1	-	1	-	1	-	-	1	-
SELL FOOD PRODUCTS			-	-	3	6	19	28	-	1	16	36	42	34
HANDICRAFTS			-	-	1	2	1	9	-	-	4	19	8	11
SHOPPING			2	-	3	3	27	21	1	9	24	50	70	58
FUEL COLLECTION			2	1	27	40	69	62	-	4	15	32	44	28
OBTAINING WATER			2	7	33	23	39	26	-	13	57	53	62	21
TRADING			-	1	1	3	4	5	-	1	13	10	10	11
COOKING			2	3	3	6	9	8	-	18	52	69	80	46

Table 13.2

Responsibilities By Age and Sex for Korat
(Percentage of Household Members)

	SEX		MALE					FEMALE						
	AGE		1-5	6-12	13-19	20-26	27-40	41+	1-5	6-12	13-19	20-26	27-40	41+
TOTAL			54	89	104	59	96	119	55	121	92	74	84	138
CHILD CARE			-	6	7	5	23	8	-	13	9	51	50	22
HOUSEWORK			-	13	28	20	19	23	-	26	71	84	89	54
LAND PREPARATION			-	3	39	59	74	63	2	2	42	49	46	33
PLANTING			-	3	42	56	75	63	4	2	48	62	68	48
PLANT CARE			-	1	30	54	71	64	2	1	36	46	49	38
HARVESTING			-	2	48	58	70	61	4	2	51	69	68	51
THRESHING			-	1	43	56	69	53	4	1	33	61	50	29
ANIMAL HUSBANDRY			-	11	37	24	41	45	-	8	27	41	40	26
FISH RAISING			-	1	1	1	2	4	-	1	2	4	4	2
SELL FOOD PRODUCTS			-	-	10	22	46	45	-	-	5	16	37	25
HANDICRAFTS			-	3	3	1	4	12	-	4	12	15	7	8
SHOPPING			-	1	8	20	24	18	-	7	27	59	81	57
FUEL COLLECTION			-	3	21	54	71	59	2	3	21	43	46	41
OBTAINING WATER			-	10	38	46	41	21	-	23	75	74	70	24
TRADING			-	-	3	-	4	4	2	3	3	7	14	17
COOKING			-	4	11	17	15	11	-	3	45	80	80	50

Table 13.3

Responsibilities By Age and Sex for Srisaket
(Percentage of Household Members)

	SEX	MALE						FEMALE					
	AGE	1-5	6-12	13-19	20-26	27-40	41+	1-5	6-12	13-19	20-26	27-40	41+
TOTAL		71	135	113	66	101	111	78	130	141	87	91	125
CHILD CARE		3	19	9	12	22	12	3	11	20	55	58	40
HOUSEWORK		1	19	16	12	19	14	3	25	73	83	91	67
LAND PREPARATION		3	10	55	76	95	78	-	6	54	68	69	38
PLANTING		4	17	66	83	96	84	1	16	74	91	92	66
PLANT CARE		1	10	50	64	90	86	-	4	55	74	80	56
HARVESTING		4	17	65	91	98	80	1	15	77	94	96	70
THRESHING		3	6	53	77	91	76	-	5	44	56	62	34
ANIMAL HUSBANDRY		3	47	50	36	44	43	5	25	38	32	30	35
FISH RAISING		-	-	1	-	-	-	-	-	-	-	-	1
SELL FOOD PRODUCTS		-	1	3	9	59	55	-	-	6	15	20	18
HANDICRAFTS		-	-	2	5	3	3	-	3	33	36	45	45
SHOPPING		-	4	10	12	43	28	1	4	30	38	54	33
FUEL COLLECTION		-	14	50	59	89	76	1	9	48	62	65	43
OBTAINING WATER		3	29	45	42	56	21	1	29	82	79	79	37
TRADING		-	4	2	8	4	10	-	2	8	3	5	6
COOKING		1	6	12	12	15	9	-	7	60	84	97	66

Table 13.4

Responsibilities By Age and Sex for Kamphangphet
(Percentage of Household Members)

	SEX	MALE						FEMALE					
	AGE	1-5	6-12	13-19	20-26	27-40	41+	1-5	6-12	13-19	20-26	27-40	41+
TOTAL		47	84	101	53	65	106	38	89	106	64	74	107
CHILD CARE		-	6	7	8	23	10	5	16	8	42	42	21
HOUSEWORK		2	30	30	36	18	27	16	42	74	86	85	70
LAND PREPARATION		-	10	73	75	95	81	8	6	70	81	88	64
PLANTING		-	10	74	74	95	84	8	7	72	81	88	66
PLANT CARE		-	8	65	60	97	84	11	6	58	81	84	61
HARVESTING		-	7	70	74	95	84	11	8	69	84	88	65
THRESHING		-	7	50	62	62	59	11	-	51	63	59	46
ANIMAL HUSBANDRY		6	4	42	34	26	33	8	24	31	27	31	25
FISH RAISING		-	-	1	4	-	3	-	-	-	2	-	2
SELL FOOD PRODUCTS		-	1	4	15	48	42	-	1	4	5	16	23
HANDICRAFTS		-	-	-	-	-	4	-	1	-	5	-	3
SHOPPING		-	5	16	15	9	13	5	10	54	77	86	68
FUEL COLLECTION		-	7	41	58	58	62	5	2	23	41	50	39
OBTAINING WATER		2	20	37	34	37	23	-	19	61	64	55	60
TRADING		-	1	1	4	5	7	-	4	9	3	4	8
COOKING		-	2	11	15	9	15	5	10	67	84	84	67

Table 13.5

Responsibilities By Age and Sex for Lamang
(Percentage of Household Members)

	SEX		MALE					FEMALE						
	AGE		1-5	6-12	13-19	20-26	27-40	41+	1-5	6-12	13-19	20-26	27-40	41+
TOTAL			19	81	103	67	67	137	30	80	85	81	89	145
CHILD CARE			-	11	10	9	19	25	10	21	18	31	54	41
HOUSEWORK			-	31	40	37	40	35	13	46	82	73	88	78
LAND PREPARATION			-	-	42	73	72	77	3	6	51	54	56	53
PLANTING			-	2	47	72	73	79	3	6	54	63	76	61
PLANT CARE			-	1	42	69	69	78	3	6	44	52	64	56
HARVESTING			-	4	50	72	73	79	3	45	54	65	75	63
THRESHING			-	4	44	69	73	73	3	5	48	53	66	54
ANIMAL HUSBANDRY			5	17	48	33	31	55	3	18	40	32	47	48
FISH RAISING			-	-	3	-	1	4	-	-	2	1	1	-
SELL FOOD PRODUCTS			-	-	6	21	30	37	-	4	8	10	20	22
HANDICRAFTS			5	1	7	1	3	12	3	5	25	7	17	17
SHOPPING			5	5	9	18	18	20	10	20	49	57	83	68
FUEL COLLECTION			-	5	34	61	70	69	10	9	35	41	62	50
OBTAINING WATER			-	17	50	43	36	32	10	36	69	73	78	61
TRADING			-	4	7	13	9	12	3	8	9	14	28	26
COOKING			-	1	15	21	16	14	10	15	67	67	84	72

Table 13.6

Responsibilities By Age and Sex for Songkla
(Percentage of Household Members)

	SEX		MALE					FEMALE						
	AGE		1-5	6-12	13-19	20-26	27-40	41+	1-5	6-12	13-19	20-26	27-40	41+
TOTAL			51	69	82	42	69	108	33	72	77	57	82	115
CHILD CARE			2	6	4	5	9	6	-	7	13	39	40	17
HOUSEWORK			-	9	10	12	10	8	-	29	73	67	80	62
LAND PREPARATION			2	3	29	52	83	78	-	-	22	44	65	48
PLANTING			-	1	22	48	68	64	-	3	44	84	90	73
PLANT CARE			-	3	28	36	83	77	-	3	27	60	74	61
HARVESTING			-	-	32	48	57	42	-	4	56	89	89	77
THRESHING			-	-	2	5	12	5	-	-	48	77	82	70
ANIMAL HUSBANDRY			2	10	34	19	51	56	3	13	31	47	52	43
FISH RAISING			-	-	-	-	-	-	-	-	-	-	-	1
SELL FOOD PRODUCTS			-	-	6	10	46	19	-	-	10	40	52	50
HANDICRAFTS			-	-	-	-	4	1	-	-	-	-	2	1
SHOPPING			-	-	4	-	10	8	-	-	25	46	83	71
FUEL COLLECTION			-	-	21	40	70	53	-	1	30	61	72	52
OBTAINING WATER			-	16	35	33	45	25	-	25	69	74	82	60
TRADING			-	-	-	2	4	1	-	-	6	9	13	14
COOKING			-	1	2	10	4	6	-	14	68	77	84	68

Table 13.7

Responsibilities By Age and Sex for Chantaburi
(Percentage of Household Members)

	SEX		MALE					FEMALE						
	AGE		1-5	6-12	13-19	20-26	27-40	41+	1-5	6-12	13-19	20-26	27-40	41+
TOTAL			37	93	91	43	81	101	61	108	111	64	67	107
CHILD CARE			3	6	1	16	15	13	-	8	13	44	49	24
HOUSEWORK			-	10	20	19	25	24	-	21	57	80	97	67
LAND PREPARATION			-	3	45	49	77	66	-	1	33	47	76	41
PLANTING			-	3	53	60	75	60	-	-	56	64	99	55
PLANT CARE			-	4	35	49	78	69	-	-	31	48	81	49
HARVESTING			-	3	49	65	69	57	-	1	57	70	93	52
THRESHING			-	-	36	51	63	61	-	-	28	47	52	35
ANIMAL HUSBANDRY			3	23	31	19	25	41	-	6	20	22	36	29
FISH RAISING			-	2	-	-	-	-	-	-	-	2	-	-
SELL FOOD PRODUCTS			-	-	8	14	43	38	-	-	2	20	43	26
HANDICRAFTS			-	-	-	-	-	3	-	-	-	2	4	10
SHOPPING			3	5	12	14	23	26	-	5	20	64	97	60
FUEL COLLECTION			-	4	38	53	79	66	-	1	35	45	85	46
OBTAINING WATER			-	11	34	40	51	41	-	10	62	77	76	37
TRADING			-	1	8	2	9	8	-	1	5	9	16	9
COOKING			-	6	14	19	17	18	-	9	55	80	91	64

Table 13.8

Responsibilities By Age and Sex for Roi-Et
(Percentage of Household Members).

	SEX	MALE						FEMALE					
	AGE	1-5	6-12	13-19	20-26	27-40	41+	1-5	6-12	13-19	20-26	27-40	41+
TOTAL		67	118	89	59	88	81	62	103	91	54	93	109
CHILD CARE		3	4	3	20	20	14	-	11	23	63	42	37
HOUSEWORK		3	9	13	20	15	9	2	23	15	85	87	61
LAND PREPARATION		-	2	54	86	98	80	-	3	36	57	65	64
PLANTING		3	19	67	90	98	90	2	21	79	93	97	64
PLANT CARE		1	10	48	80	95	88	2	17	52	65	69	52
HARVESTING		3	18	69	90	98	93	2	21	81	91	95	72
THRESHING		-	5	63	90	93	74	-	1	45	52	57	24
ANIMAL HUSBANDRY		1	32	65	49	45	43	2	32	55	37	48	43
FISH RAISING		-	-	1	2	-	6	-	-	-	-	-	1
SELL FOOD PRODUCTS		-	-	12	46	67	52	-	-	7	13	15	15
HANDICRAFTS		-	2	9	24	25	20	-	4	26	54	67	62
SHOPPING		-	3	11	37	42	42	-	3	24	59	41	28
FUEL COLLECTION		-	9	38	68	75	40	-	9	48	69	71	45
OBTAINING WATER		-	18	36	47	39	12	-	35	78	83	88	31
TRADING		-	1	2	8	10	6	-	3	9	7	9	7
COOKING		-	2	12	24	17	16	-	10	60	85	90	68

Table 13.9

Responsibilities By Age and Sex for Udorn Thani
(Percentage of Household Members)

	SEX		MALE					FEMALE					
	AGE		1-5	6-12	13-19	20-26	27-40	41+	1-5	6-12	13-19	20-26	27-40
TOTAL		73	132	137	60	80	105	72	130	126	59	94	100
CHILD CARE		-	11	5	7	24	7	-	12	18	54	57	25
HOUSEWORK		1	15	18	15	23	7	1	25	72	83	84	61
LAND PREPARATION		-	1	57	85	88	72	-	3	44	64	65	46
PLANTING		-	2	58	88	90	78	-	4	64	86	88	63
PLANT CARE		-	2	53	75	90	80	-	3	54	69	79	53
HARVESTING		-	3	61	90	90	80	-	4	64	86	89	67
THRESHING		-	3	60	85	88	69	1	5	56	66	74	50
ANIMAL HUSBANDRY		-	33	53	23	45	28	-	13	29	25	28	22
FISH RAISING		-	-	-	3	1	7	-	1	-	-	1	2
SELL FOOD PRODUCTS		-	-	3	23	59	57	-	-	6	17	23	26
HANDICRAFTS		-	-	9	5	11	20	1	2	35	66	61	50
SHOPPING		-	2	4	13	19	20	-	7	40	80	81	60
FUEL COLLECTION		-	2	44	72	85	61	-	-	24	20	38	27
OBTAINING WATER		-	16	33	37	23	6	1	18	75	86	65	25
TRADING		-	-	1	3	5	7	-	1	5	3	7	12
COOKING		-	2	7	13	11	4	-	8	65	88	85	61

Table 13.10

Responsibilities By Age and Sex for Chiang Mai
(Percentage of Household Members)

	SEX		MALE						FEMALE					
	AGE		1-5	6-12	13-19	20-26	27-40	41+	1-5	6-12	13-19	20-26	27-40	41+
TOTAL			25	47	79	69	67	122	20	52	80	61	69	119
CHILD CARE			-	9	6	9	13	18	-	8	11	28	33	18
HOUSEWORK			-	30	28	22	28	36	-	37	74	82	96	78
LAND PREPARATION			-	2	49	75	66	72	-	2	43	59	59	50
PLANTING			4	6	53	78	66	73	-	2	50	67	67	55
PLANT CARE			-	4	53	77	66	71	-	2	43	62	64	53
HARVESTING			-	6	52	75	67	72	-	2	49	69	68	55
THRESHING			-	4	46	71	58	69	-	2	43	52	59	45
ANIMAL HUSBANDRY			4	21	38	39	42	51	-	2	30	41	45	43
FISH RAISING			-	-	-	-	1	-	-	-	3	-	-	2
SELL FOOD PRODUCTS			-	-	4	10	22	21	-	-	1	7	10	10
HANDICRAFTS			-	-	4	9	1	6	-	-	1	2	4	6
SHOPPING			-	6	5	6	10	11	-	8	45	52	88	73
FUEL COLLECTION			4	9	38	59	70	61	-	6	31	46	48	42
OBTAINING WATER			-	13	24	26	18	16	-	10	73	72	83	63
TRADING			-	-	1	-	7	8	-	-	4	10	12	13
COOKING			-	4	5	4	7	11	-	15	68	79	91	74

rates are 30% for the men versus 45% for the women. The rate of participation dropped off significantly for adults above 40, probably due to the strenuous nature of this work. Men take very little part in the cooking. Women assume this responsibility with those between 27 and 40 years of age having the highest rate of participation. The same is true for shopping and selling food products. Women are also the most active in the trading and handicraft activities with all ages participating.

In Korat, the participation by men and women in child care and housework is higher than for Petchaburi, but the relative contributions by age group and by sex are similar. About one-fourth of the men and 70% of the women contribute to the housework. The participation in agricultural activities is lower than in Petchaburi for both men and women. About one-half of the men between 13 and 19 and four-fifths of the men above 20 participate in land preparation, planting and harvesting. For women the rates are about 45% for the age groups 13 to 19 and above 40, and 60% for those between 20 and 40. Both men and women take care of animals. Fuel is collected mostly by adults. About 60% of the men and 45% of the women over 19 collect fuel, but only one-fifth of those between 13 and 19. About three-fourths of the women and two-fifths of the men between 13 and 40 help in carrying water to the house. As in Petchaburi, the women do most of the cooking: about four-fifths of the women between 20 and 40, one-half of the women between 13 and 19 and over 40, one-sixteenth of the men between 20 and 40 and one-ninth of the men between 13 and 19 and over 40, indicated their participation.

The distribution of responsibilities in Srisaket is similar to Korat; however, the level of participation is much higher in agricultural activities, especially for the age group between 27 and 40, and it is also higher for children between 6 and 12 and adults over 40. For the peak agricultural activities, the men and women from 27 to 40 have a participation rate of 95%, while the age group from 20 to 26 have a rate of 83%. The age group over 40 has a participation rate of 68% for females and 81% for males. The care of animals is a more important task in Srisaket than in Petchaburi or Korat. Thirty-five percent of the women and 44% of the men are involved. Women are more active in the collection of fuel and water than in the other two provinces. About 80% of the women between 13 and 40 help in carrying water and 57% collect fuel. Between 15% and 29% of the girls help in housework, planting, harvesting, animal husbandry, and carrying water, while between 17% and 47% of the boys help with child care, housework, planting, harvesting, animal husbandry, and carrying water.

In Kamphangphet, the responsibility of caring for children is done by both men and women. The greatest responsibility is assumed by women between the ages of 20 and 40 and men between the ages of 27 and 40. The housework is done largely by the women; 85% of the women between 20 and 40 indicated that they participated. Although men have a lesser role their level of participation is higher than observed in the previous three provinces; 31% of the men between 13 and 27 indicated that they help with the housework. The involvement of men and women in agricultural

*Boys and girls refer to males and females 12 or under; men and women refer to those over 12 years of age.

activities is as high as in Srisaket. Over four-fifths of the women between 20 and 40 and more than two-thirds of those over 40 are involved in all agri-cultural activities except threshing. The participation by men and women in threshing is about equal. Men and women participated equally in animal husbandry, the participation rates by age group vary between one-fourth and two-fifths. For shopping, the women participate more than in the previous provinces; the average rate of participation is close to 70%. The collection of fuel involves a higher rate of participation than in Petchaburi, but a lower rate than in Srisaket. For men, the participation rate is about 54% versus 38% for women. The carrying of water is performed by both men and women, but the latter are twice as likely to perform this task. The allocation of cooking activities is very similar to that observed in Srisaket.

In Lampang, the women participate at about twice the rate as men in child care and housework. In the latter, the participation for both men and women is relatively high with about 38% of the men and 80% of the women taking part. The level of participation in agricultural activities is similar to that for Petchaburi, except that the level of participation for non-peak activities, e.g., plant care and threshing, is higher. About 44% of the men between 13 and 19, 72% of the men between 20 and 40, 52% of the women between 13 and 19, and 54% of the women between 20 and 40 participate in agriculture. Those over 40 have a high rate of participation, about 77% for men and 56% for women. The participation rates in fuel collection and carrying water in Lampang are less than in Srisaket but more than in Kampanghet. About two-thirds of the men over 19 and one-half the women over 19 collect fuel, while about two-fifths of the men and two-thirds of the women over 12 help to carry water. Cooking is done primarily by women over 12. The participation by men is than higher in the other provinces, but it is still much less than for women.

In Songkla, the men participate less in childcare and housework than in the previous five provinces. The level of participation by women is about six to seven times greater than for men. In agriculture the men are more active than the women in land preparation and plant care, but the women are more active in planting and harvesting and have almost sole responsibility for threshing. Participation is highest among men over 26 and women between the ages of 20 and 40. These same two groups also take on the major responsibility for animal husbandry. The participation is generally higher than for the other provinces. Shopping is largely the responsibility of women over 26. The collection of fuel is performed about equally by men and women. The women have the dominant responsibility for carrying water. Men have very little role in cooking, but well over two-thirds of the women over 12 did the cooking.

In Chantaburi, men and women share the responsibility for most agricultural activities. The participation rate is highest for those between the ages of 27 and 40. The responsibilities for child care and housework are divided in a manner similar to Petchaburi, with the responsibility falling mostly on women between the ages of 20 and 40. Animal husbandry is an activity for both males and females above the age of 6, with those above 40 having a significant participation, 29% for the women and 41% for the men. The sale of food products is an activity which men and women over the age of 19 participate in equally. Although both

men and women participate in shopping and cooking, the responsibility falls largely on women over 26; over 70% of the women in this group do the shopping and over 75% do the cooking. A slightly higher proportion of men than women collect the fuel but only about two-fifths of the men versus two-thirds of the women help to carry the water.

In Roi-et, the participation in child care and housework is similar to that in Srisaket, with the women between 20 and 40 having the largest responsibility. The participation rate in agricultural activities for men over 19 is above 85% slightly higher than in Srisaket. The women participate equally with the men in planting and harvesting but are less active in land preparation, plant care and threshing. The rate of participation for women is slightly more than one-half. Animal husbandry is a significant activity for both men and women; about half of the men and the women participate. As in Srisaket, shopping and fuel collection are activities in which both men and women participate, although the rate of participation is much higher for the latter. About twice as many women as men indicated responsibility for carrying water, and about four times as many women as men do the cooking. Those in the age group 20 to 40 have the greatest responsibility. Over 85% of the women in this age group carry water and cook while 44% of the men carry water and 20% cook.

In Udorn Thani, the responsibility for housework and childcare is similar to that in Roi-et. In agriculture, men and women participate equally in planting and harvesting, but the men take more responsibility for land preparation, plant care, and threshing. The participation rates for those over 20 are fourth-fifths for the men and three-fifths for the women. The responsibility for animal husbandry is similar to that in Udorn Thani and Srisaket, those between 13 and 19, and 27 and 40 are most active. Udorn Thani has a high rate of participation in selling food products. For men over 26, the rate of participation is 58%. The women over 19 play a significant role in the making of handicrafts, especially woven products. Their rate of participation is close to 60%. The women assume most of the responsibility for cooking and shopping, especially the age group from 20 to 40 where the rate of participation is above 80%. The collection of fuel is left largely to the men. Those over 19 have a rate of participation of about 70% versus 30% for women. For carrying water the age group between 13 and 40 assume most of the responsibility, about one-third of the men and three-fourths of the women.

In Chiang Mai, the distribution of responsibilities is similar to that in Lampang. Men are relatively active in performing housework, but their participation rate is only about one-half that of women. The men are more active than the women in agricultural activities, especially in land preparation, plant care, and threshing. The overall participation rate for those above the age of 20 is three-fourths for men and three-fifths for women. In animal husbandry, men and women participate equally. About two-fifths of those over 12 participate. Shopping, carrying water and cooking are primarily the responsibility of women with about three-fourths of the women and one-eighth of the men over 19 taking part. For fuel collection, the men assume the major responsibility; the rate of participation of men over 19 is about 62% versus 44% for women.

10. Employment

The members of the survey households are asked about their participation in income-earning activities. These activities are classified as primary, secondary, and tertiary depending on the respondents' ranking of their importance. For each activity, data is collected on the type of occupation, season and form of remuneration. Since the respondent is generally the head of the household, the responses tend to be more complete for the older members of the household. Although family size was based on members of the household who live at home for at least six months in the year, the data on family size did not always include absent members of the household. Therefore, the information on the employment activities of those under 27 is limited, especially in the second phase of the survey, and any conclusions on the relationship between age and employment is tenuous.

The questionnaire asked about income-earning activities, but this is usually interpreted to mean any economic activity. It differed from the question about responsibility because there is a clear reference to a tangible economic return. The four major types of economic activity are farming, in which the respondent works on his own farm; farm labor, in which he hires out his labor to another farmer; nonfarm labor, in which he hires out his labor for other than farm work, and "other" in which he undertakes work not otherwise designated. The difference between nonfarm labor and "other" employment is not always clear.

The concept of season is generally associated with weather and agricultural activity rather than with a specific time period. The three seasons used in the questionnaire are the rainy season, which starts sometime in June or July and is associated with the cultivation of rice; followed by the winter season, which begins around November and is associated with the end of the monsoon rains, the rice harvest, planting of secondary crops, and colder weather; and then by the summer season, which commences toward March when the weather becomes hot and dusty and most agricultural activity ceases. Since the seasons are not designated by fixed dates and the weather varies in different regions, there is not always a consistent interpretation of time period.

The respondent, in identifying the rewards for his labor, included not only wage income but also product income. Three distinct terms are used for product income crops, the products of agricultural activities; goods, the products of nonagricultural activities, and "other," rewards not otherwise designated. There is some overlap in the interpretation of these three terms. The category "other" is generally used to refer to intermediate and final products from a production activity.

In all of the provinces, the dominant economic activity is farming, thus the dominant form of employment is either farming or farm labor. The rewards for this activity include both crops and cash. The proportion of cash income varied with the extent of cultivation of cash crops and surpluses in basic foods. Next in significance are animal husbandry and sericulture. The latter is interpreted to mean the collection, processing and weaving of the silk. Whereas, farming tends to extend over at least two seasons, animal husbandry and sericulture are generally restricted to

the winter months during which the animals are let out into the fields to graze and the silk can be harvested. The other forms of employment which are prevalent include: handicrafts, nonfarm labor, and "other" employment. Where these activities are part of rural industry or commerce, they might last throughout the year, but in general this employment is limited to periods of slack demand for agricultural labor. The income from these activities includes both cash and goods.

The following discussion focuses on the differences in employment in each of the provinces surveyed.

In Petchaburi, the most prevalent types of employment are farming, farm labor, sericulture, and animal husbandry (see Tables 14.1 to 14.3). The first two provide primary employment for 87% of those employed. About 80% of the sample have secondary employment and 68% indicated that they have tertiary employment. Sericulture provides employment for 53% of those with secondary employment. Farming and farm labor provides secondary employment for another 20%. About three-fourths of those having tertiary employment are in animal husbandry.

The sample of workers in Petchaburi is relatively old. Of those having primary employment, 57% are over 40 and another 25% are between 27 and 40. About 90% of those over 40 indicate that farming or farm labor is their primary activity. Sericulture is very much a handicraft activity practiced by older people. The participation rate in sericulture as a secondary form of employment increase from 36% for those between 13 and 19, to 58% for those over 40. For animal husbandry, the employment by age group is relatively constant, about 77%, except for 13 to 19 which have a rate of 88%.

An equal percentage of men and women listed farming or farm labor as their primary form of employment, but more women than men listed farm labor (see Table 15). The response rate is about equal for men and women in primary employment, but about 50% more men than women indicated that they have secondary and tertiary employment. For sericulture as a second job, and animal husbandry as a third job, the response rates are about the same for men and women.

Those participating in farming receive both cash and crops in return for their labor, but farm labor is paid only in cash. Sericulture is primarily a cash paying job, although other benefits included meals and silk. Animal husbandry activities are rewarded with cash for about three-fourths of the respondents. Other rewards include housing, land and crops. About one-sixth indicated no reward other than the use of the animals (see Table 16).

Employment in farming generally lasts for more than one season. However, 57% of those employed in farm labor indicated only one season of employment, usually the winter season (Table 17). Animal husbandry is primarily a winter activity although 20% of the respondents listed it as summer employment. During the summer, the animals generally feed off haystacks and in the rainy season they are used for farm work. Sericulture is also a winter activity according to 89% of those employed,

Primary Employment by Age - Petchaburi
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	56	69	71	81	314	75
Farm Labor	33	16	16	8	51	12
Non-Farm Labor	4	4	4	2	12	3
Animal Husbandry	-	-	-	2	5	1
Trading	-	2	4	1	8	2
Handicraft	4	2	1	1	5	1
Storekeeper	4	-	1	*	3	1
Soldier	-	-	1	-	1	*
Salaried Employee	-	-	-	1	2	1
Fisherman	-	2	-	-	1	*
Other	-	4	2	4	14	3
Observations	27	45	104	240	416	
Total Percentage	6	11	25	57		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Table 14.2

Secondary Employment by Age - Petchaburi
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	-	-	-	3	6	2
Farm Labor	36	31	18	13	59	18
Non-Farm Labor	14	3	6	3	14	4
Animal Husbandry	-	-	4	3	8	2
Trading	-	6	6	7	20	6
Handicraft	9	11	11	8	31	9
Craftsman	-	3	-	1	3	1
Storekeeper	5	-	1	1	3	1
Administration	-	-	-	1	1	*
Transport	-	3	3	4	10	3
Sericulture	36	44	51	58	178	53
Observations	22	36	79	196	333	
Total Percentage	7	11	24	59		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Tab 14.3

Tertiary Employment by Age - Petchaburi
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	-	-	2	5	9	3
Farm Labor	-	-	2	1	2	1
Non-Farm Labor	6	8	3	6	16	6
Animal Husbandry	88	77	75	77	119	76
Professional	6	8	16	9	28	10
Salaried Employee	-	8	3	3	9	3
Observations	16	26	64	177	283	
Total Percentage	6	10	23	62		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Table 15

Employment by Sex - Petchaburi
(Percentage of Employees)

	PRIMARY		SECONDARY		TERTIARY	
	Male	Female	Male	Female	Male	Female
Farming	82	69	2	2	3	3
Farm Labor	6	19	18	17	1	1
Non-Farm Labor	1	5	6	2	5	7
Animal Husbandry	1	2	1	4	78	77
Professional	-	-	-	-	10	9
Trading	1	3	6	6	-	-
Craftsman	-	-	1	1	-	-
Handicraft	1	2	9	10	-	-
Storekeeper	1	1	-	2	-	-
Administrator	-	-	1	-	-	-
Transport	-	-	3	3	-	-
Sericulture	-	-	55	51	-	-
Soldier	-	1	-	-	-	-
Salaried Employee	1	-	-	-	3	4
Fisherman	1	-	-	1	-	-
Other	6	1	-	-	-	-
Observations	218	200	196	138	177	107
Total Percentage	52	48	59	41	62	38

Table 16

Employment by Remuneration - Petchaburi
(Percentage of those in specified occupations)

Type of Employment	Form of Remuneration							Total Respondents
	Cash	Crop	Goods	Lands	House	Meal	Other	
Farming	80	95	-	-	-	2	40	331
Farm Labor	96	2	-	-	1	1	30	113
Non-Farm Labor	79	5	-	-	-	-	19	42
Animal Husbandry	73	2	-	4	4	1	1	233
Trading	100	4	11	-	-	-	29	28
Craftsmen	67	33	-	-	67	67	67	3
Handicraft	61	19	33	-	-	-	33	36
Storekeeper	100	17	33	-	-	-	17	6
Administration	100	-	-	-	-	-	-	1
Soldier	100	-	-	-	100	100	-	1
Professional	11	-	7	4	-	-	-	28
Salaried Employee	91	-	-	-	-	-	9	11
Transport	100	-	-	-	-	50	10	10
Sericulture	96	-	-	-	1	31	32	178
Fisherman	100	-	-	-	50	50	-	-
Other	79	14	7	-	-	-	36	14

Table 17

Employment by Season - Petchaburi
(Percentage of Employees)

Employment	Winter	Summer	Rainy	More than One Season	Total Number
Farming	1	1	8	90	331
Farm Labor	42	6	9	43	113
Non-Farm Labor	57	19	-	24	42
Animal Husbandry	73	21	-	5	233
Trading	29	4	-	68	28
Craftsman	33	-	-	67	3
Handicraft	33	-	-	67	36
Storekeeper	-	-	-	100	6
Administration	-	-	-	100	1
Soldier	-	-	-	100	1
Professional	-	100	-	-	28
Salaried Employee	9	73	-	18	11
Transport	80	20	-	-	10
Sericulture	89	11	-	-	178
Fisherman	50	50	-	-	2
Other	14	7	-	79	14
Observations					
Total Percentage					

since the raw silk is obtained in winter and most processing and weaving occurs then.

In Korat, farming and farm labor account for 80% of primary employment (see Table 18.1 to 18.3). Farm labor also accounts for 44% of the secondary employment. Seventy-eight percent of the sample listed a secondary form of employment and sixty-two percent listed a third form of employment. Sericulture is also an important form of employment, accounting for 33% of the jobs. Handicrafts is the third most important source of secondary employment and provides another 12% of the jobs. Animal husbandry accounted for 85% of the tertiary jobs.

The work force in Korat is also old, though not as old as in Petchaburi. About 52% of those having primary employment are over 40 years old. While the percentage of primary jobs in farming or farm labor is relatively constant across the age groups, the ratio of farming to farm labor increases with age. Farm labor as a secondary form of employment also decreases as age increases; 60% of those between 13 and 19 with second jobs listed farm labor versus 35% of those over 40. On the other hand, sericulture is undertaken mostly by older villagers. The participation rate for those below 40 is about half that for those over 40. Animal husbandry is also more frequently mentioned by older villagers. The rate of participation in this tertiary form of employment rose from 50% for those between 13 and 19 to 90% for those over 40.

The split in jobs between sexes in Korat is similar to that in Petchaburi (see Table 19). Males account for 56% of the primary employment, 61% of the secondary employment, and 67% of the tertiary employment. Males and females have about an equal rate of participation in agriculture, but the men tended to list farming as their primary form of employment while the women listed farming and farm labor with the same frequency. For secondary employment, 48% of the men listed farm labor and only 30% listed sericulture; for women, 38% listed sericulture and 37% list farm labor. The rate of tertiary employment in animal husbandry is about the same for men and women.

The pattern of remuneration for the different forms of employment is also similar to that in Petchaburi (Table 20). Crops are the most frequently mentioned income from farming, but 72% mentioned cash and 48% mentioned "other" benefits. Farm labor is paid cash in 94% of the jobs, but 18% receive "other" benefits. Workers in handicrafts receive cash wages in 88% of the jobs and 15% receive "other" rewards, which presumably includes the product of their labor. Slightly more than half those employed in animal husbandry indicated that they receive a wage for their work. Presumably the rest receive the benefits of using or selling the animals. In sericulture, almost 90% of the workers receive a cash wage, while about one-third receive free meals and one-fourth receive "other" benefits, presumably woven silk.

Over 90% of the jobs in farming and farm labor lasted for more than one season. Animal husbandry and sericulture are both seasonal. Most of the jobs last only for the winter season when the animals graze upon the harvested fields and the raw silk is gathered. In handicrafts, employment generally lasts for more than one season (Table 21).

Table 18.1

Primary Employment by Age - Korat
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	55	59	52	60	205	57
Farm Labor	36	25	25	21	84	23
Non-Farm Labor	-	5	2	3	10	3
Trading	-	7	9	5	23	7
Handicraft	-	-	2	2	5	1
Salaried Employee	-	2	4	4	13	4
Transport	-	-	1	-	1	*
Sericulture	-	-	-	1	1	*
Other	9	2	6	4	16	4
Observations	11	44	116	187	358	
Total Percentage	3	12	32	52		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Secondary Employment by Age - Korat
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	-	4	-	-	1	*
Farm Labor	60	64	53	35	122	44
Non-Farm Labor	-	-	2	3	6	2
Animal Husbandry	-	-	1	-	1	*
Trading	-	-	5	6	14	5
Handicraft	20	8	15	11	34	12
Professional	-	-	1	1	2	1
Salaried Employee	-	-	1	-	1	*
Transport	-	4	3	2	7	3
Sericulture	20	20	18	43	92	33
Observations	5	25	88	162	280	
Total Percentage	2	9	31	58		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Tertiary Employment by Age - Korat
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	-	-	-	2	3	1
Farm Labor	50	15	4	2	8	4
Non-Farm Labor	-	-	5	-	4	2
Animal Husbandry	50	62	84	90	191	86
Trading	-	-	3	2	4	2
Handicraft	-	-	-	1	1	1
Professional	-	-	4	2	6	3
Transport	-	8	-	1	2	1
Other	-	15	-	1	3	1
Observations	2	13	77	130	222	
Total Percentage	1	6	35	59		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Table 19

Employment by Sex - Korat
(Percentage of Employees)

	PRIMARY		SECONDARY		TERTIARY	
	Male	Female	Male	Female	Male	Female
Farming	72	39	-	1	1	1
Farm Labor	11	39	48	37	3	4
Non-Farm Labor	4	2	2	3	3	-
Animal Husbandry	-	-	-	1	87	85
Professional	-	-	-	-	3	3
Trading	3	11	4	7	-	6
Handicraft	2	1	3	11	1	-
Transport	1	-	3	2	1	-
Sericulture	1	-	30	38	-	-
Salaried Employee	6	1	1	-	-	-
Other	3	6	-	-	1	1
Observations	200	160	172	108	149	73
Total Percentage	56	44	61	39	67	33

Table 20

Employment by Remuneration - Korat
(Percentage of those in specified occupations)

Type of Employment	Form of Remuneration						Total Respondents
	Cash	Crop	Goods	House	Meal	Other	
Farming	72	96	-	-	1	48	210
Farm Labor	94	4	-	-	-	18	214
Non-Farm Labor	90	-	-	-	-	25	20
Animal Husbandry	54	1	-	2	1	-	192
Trading	100	2	-	-	-	24	42
Handicraft	88	3	5	-	5	15	40
Professional	13	-	-	-	13	-	8
Salaried Employee	93	-	-	-	-	64	14
Transport	90	-	-	-	20	10	10
Sericulture	89	-	-	2	34	24	93
Other	89	-	5	-	-0	26	19

Table 21

Employment by Season - Korat
(Percentage of Employees)

Employment	Winter	Summer	Rainy	More than One Season	Total Number
Farming	1	*	2	97	210
Farm Labor	7	*	3	90	214
Non-Farm Labor	10	10	-	80	20
Animal Husbandry	84	16	-	1	192
Trading	5	2	-	93	42
Handicraft	8	-	-	93	40
Professional	13	88	-	-	8
Salaried Employee	14	-	-	86	14
Transport	50	10	-	40	10
Sericulture	82	17	-	1	93
Other	5	-	16	79	19
Observations					
Total Percentage					

In Srisaket, the most important form of employment is farming which accounts for 87% of the jobs listed under primary employment and 47% of the jobs listed as secondary employment (see Tables 22.1 to 22.3). Farm labor is less significant than in the previous provinces. It accounts for only 4% of the primary employment and 8% of the secondary employment. Some of the respondents listed farming as both a primary and secondary form of employment based on a distinction in the type of crops. The second most important form of employment is "other" employment which includes weaving bamboo. This group of activities accounted for 5% of the primary employment, 22% of the secondary employment, and 25% of the tertiary employment. Nonfarm labor is the third most important category accounting for 2% of the primary employment, 9% of the secondary employment, and 37% of the tertiary employment. This category includes sawing wood for lumber. Since the area has no animals and very little silk growing, neither animal husbandry or sericulture are significant forms of employment. The relative poverty of the region is reflected in the fact that other than farming, there is no significant source of employment. While 69% of the workers have secondary employment, only 27% have a tertiary form of employment.

The work force in Srisaket is much younger than in the previous provinces. Only 35% of the villagers having primary employment are over 40, while 28% are between 27 and 40. For secondary employment, these percentages are nearly equal, and in tertiary employment those between 27 and 40 exceed those over 40. The percentage of females in the work force exceeds the percentage of males by 6%. However, in secondary employment the percentages are about equal and in tertiary employment the percentages are reversed. The rate of participation by men and women in farming as a primary and secondary form of employment is equal. In the nonfarm labor category, men are more prevalent than women, while women are more prevalent than men in "other" employment (Table 23).

The remuneration from farming is the same as in the other provinces, almost all respondents listed crops and 60% listed cash wages (see Table 24). Nonfarm labor is paid cash wages only. "Other" employment provides wages for 36% of the respondents but 54% receive goods, presumably woven bamboo articles. Both nonfarm and "other" employment occur primarily during the winter months. In contrast, 85% of the farming jobs extend over more than one season, usually the summer and rainy seasons (see Table 25).

In Kamphangphet (Tables 26.1 to 29), the principal forms of employment are farming and farm labor (Tables 26.1 to 26.3). The former accounts for 76% of the primary jobs, 17% of the secondary jobs, and 18% of the tertiary jobs. The latter accounts for 15% of the primary employment, 40% of the secondary employment, and 33% of the tertiary employment. Sericulture and "other" employment are important as sources of secondary employment with the former providing 18% of the jobs and the latter 12%. The "other" category refers primarily to bamboo and cloth weaving. Animal husbandry is a significant source of tertiary employment; it accounts for 35% of the jobs. Only 56% of the sample have secondary jobs and only 42% have tertiary jobs.

Primary Employment by Age - Srisaket
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	92	88	84	87	516	87
Farm Labor	4	4	7	2	25	4
Non-Farm Labor	1	1	2	2	9	2
Trading	-	-	1	1	3	1
Handicraft	-	1	-	1	2	*
Administration	-	-	-	1	1	*
Salaried Employee	1	1	1	1	6	1
Sericulture	-	-	-	1	2	*
Other	3	6	6	4	29	5
Observations	107	105	171	210	593	
Total Percentage	18	17	28	35		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Secondary Employment by Age - Srisaket
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	46	41	54	44	192	47
Farm Labor	9	12	6	5	29	8
Non-Farm Labor	13	11	9	8	39	9
Trading	-	5	1	3	8	2
Craftsman	-	2	-	-	1	*
Handicraft	2	2	1	1	4	1
Storekeeper	-	-	1	1	2	1
Professional	-	2	-	1	2	1
Salaried Employee	10	3	4	1	16	4
Sericulture	4	3	4	11	25	6
Other	16	21	21	27	91	22
Observations	68	66	132	143	409	
Total Percentage	16	16	32	35		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Tab 22.3

Tertiary Employment by Age - Srisaket
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	10	7	11	29	25	16
Farm Labor	15	7	8	8	14	9
Non-Farm Labor	45	56	40	19	58	37
Trading	-	7	-	8	6	4
Craftsman	-	-	2	-	1	1
Handicraft	5	-	3	4	5	3
Salaried Employee	5	-	2	6	5	3
Transport	-	-	2	-	1	1
Sericulture	5	4	-	4	4	3
Other	15	19	33	21	39	25
Observations	20	27	63	48	158	
Total Percentage	13	17	40	30		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Table 23

Employment by Sex - Srisaket
(Percentage of Employees)

	PRIMARY		SECONDARY		TERTIARY	
	Male	Female	Male	Female	Male	Female
Farming	88	86	47	47	19	11
Farm Labor	4	5	12	3	9	9
Non-Farm Labor	1	2	15	4	48	23
Professional	-	-	1	1	-	-
Trading	*	1	2	2	7	-
Craftsman	-	-	1	-	-	1
Handicraft	*	*	1	1	2	4
Storekeeper	-	-	1	1	-	-
Administrator	*	-	-	-	-	-
Transport	-	-	-	-	1	-
Sericulture	-	1	2	10	-	6
Salaried Employee	1	1	5	3	3	3
Other	6	5	15	30	10	43
Observations	-	-	213	201	88	70
Total Percentage	47	53	51	49	56	44

Table 24

Employment by Remuneration - Srisaket
(Percentage of those in specified occupations)

Type of Employment	Form of Remuneration						Total Respondents
	Cash	Crop	Goods	Lands	House	Meal	
Farming	60	97	*	-	-	1	742
Farm Labor	70	24	-	-	-	13	70
Non-Farm Labor	100	-	-	-	1	-	106
Trading	94	6	-	-	-	-	17
Craftsmen	50	50	50	-	-	-	2
Handicraft	82	9	27	-	-	-	11
Storekeeper	100	-	-	-	-	-	2
Administration	100	-	-	-	-	-	1
Professional	50	-	-	-	-	-	2
Salaried Employee	96	-	-	-	-	-	27
Transport	100	-	-	-	-	-	1
Sericulture	6	3	97	-	-	-	31
Other	36	7	54	1	6	2	162

Table 25

Employment by Season - Srisaket
(Percentage of Employees)

Employment	Winter	Summer	Rainy	More than One Season	Total Number
Farming	11	3	1	85	742
Farm Labor	39	13	1	46	70
Non-Farm Labor	83	3	6	8	106
Trading	35	-	-	65	17
Craftsman	100	-	-	-	1
Handicraft	64	9	-	27	11
Storekeeper	100	-	-	-	2
Administration	-	-	-	100	1
Professional	50	-	-	50	2
Salaried Employee	59	7	-	33	27
Transport	-	-	-	100	1
Sericulture	10	3	29	58	31
Other	77	3	-	21	159
Observations					
Total Percentage					

Table 26.1

Primary Employment by Age - Kampongphet
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	86	67	80	73	285	76
Farm Labor	8	21	12	16	55	15
Non-Farm Labor	2	3	-	2	7	2
Trading	-	-	1	1	2	1
Handicraft	-	-	-	1	1	*
Storekeeper	-	-	-	1	2	1
Salaried Employee	-	-	1	-	1	*
Fish Raising	-	-	-	1	1	*
Other	4	9	6	6	23	6
Observations	49	58	100	170	377	
Total Percentage	13	15	26	45		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Table 2

Secondary Employment by Age -- Kampongphet
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	6	19	12	20	35	17
Farm Labor	53	57	45	31	83	40
Non-Farm Labor	12	-	7	4	11	5
Trading	-	-	-	4	4	2
Handicraft	-	5	3	4	8	4
Storekeeper	-	-	-	2	2	1
Soldier	-	-	-	1	1	1
Transport	-	-	2	2	3	1
Sericulture	6	10	17	23	39	18
Other	24	10	15	9	25	12
Observations	17	21	60	113	211	
Total Percentage	8	10	28	53		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Table 5.3

Tertiary Employment by Age - Kamphangphet
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	8	11	9	24	29	18
Farm Labor	62	67	28	24	52	33
Non-Farm Labor	-	-	16	4	9	6
Animal Husbandry	8	22	25	44	55	35
Handicraft	-	-	3	-	1	1
Professional	-	-	9	2	5	3
Salaried Employee	-	-	-	1	1	1
Other	23	-	9	1	7	4
Observations	13	18	32	96	159	
Total Percentage	8	11	20	60		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Table 27

Employment by Sex - Kampanghet
(Percentage of Employees)

	PRIMARY		SECONDARY		TERTIARY	
	Male	Female	Male	Female	Male	Female
Farming	83	68	17	15	19	17
Farm Labor	9	21	36	46	26	45
Non-Farm Labor	2	2	6	4	5	8
Animal Husbandry	-	-	-	-	38	28
Professional	-	-	-	-	5	-
Trading	1	1	2	3	-	-
Handicraft	-	1	4	4	1	-
Storekeeper	1	1	2	-	1	-
Transport	-	-	2	-	-	-
Sericulture	-	-	21	14	-	-
Soldier	-	-	1	-	-	-
Salaried Employee	1	-	-	-	-	2
Fish Raising	-	1	-	-	-	-
Other	5	6	9	15	7	-
Observations	202	176	132	79	105	53
Total Percentage	53	47	63	37	67	34

Number of Missing Observations = 4

Table 28

Employment by Remuneration - Kamphangphet
(Percentage of those in specified occupations)

Type of Employment	Form of Remuneration						Total Respondents
	Cash	Crop	Goods	House	Meal	Other	
Farming	92	68	-	8	11	7	351
Farm Labor	98	2	-	2	4	8	191
Non-Farm Labor	100	-	-	-	4	7	27
Animal Husbandry	36	-	-	2	-	-	55
Trading	100	-	-	17	33	-	6
Handicraft	100	-	-	-	20	20	10
Storekeeper	100	25	25	-	25	25	4
Professional	20	-	-	-	-	-	5
Salaried Employee	100	-	-	50	50	-	2
Transport	100	-	-	-	33	33	3
Sericulture	51	-	-	3	28	26	39
Fish Raising	-	100	-	-	-	-	1
Other	95	22	4	-	9	5	55

Table 29

Employment by Season - Kampongphet
(Percentage of Employees)

Employment	Winter	Summer	Rainy	More than One Season	Total Number
Farming	2	1	5	93	351
Farm Labor	28	5	7	60	191
Non-Farm Labor	41	-	4	56	27
Animal Husbandry	98	2	-	-	55
Trading	-	-	-	100	6
Handicraft	10	10	20	60	10
Storekeeper	-	-	-	100	4
Soldier	100	-	-	-	1
Professional	-	100	-	-	5
Salaried Employee	50	-	-	50	2
Transport	100	-	-	-	3
Sericulture	100	-	-	-	39
Fish Raising	-	-	-	100	1
Other	11	5	-	84	55
Observations					
Total Percentage					

Primary Employment by Age - Lampung
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	23	52	37	56	177	49
Farm Labor	15	3	6	4	19	5
Non-Farm Labor	15	10	11	8	34	10
Animal Husbandry	-	-	-	1	1	*
Trading	8	-	13	7	30	8
Craftsman	-	-	-	1	1	*
Handicraft	-	-	5	4	13	4
Professional	-	7	-	-	2	1
Salaried Employee	15	7	5	4	17	5
Transport	-	-	2	-	2	1
Sericulture	-	-	-	1	1	*
Other	23	21	20	15	61	17
Observations	13	29	98	218	358	
Total Percentage	4	8	27	61		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Secondary Employment by Age - Lampung
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	-	-	3	3	8	3
Farm Labor	-	10	15	10	30	11
Non-Farm Labor	20	45	15	15	48	17
Animal Husbandry	-	5	-	-	1	*
Trading	20	5	12	8	26	9
Handicraft	-	20	27	25	68	24
Professional	-	-	1	1	2	1
Salaried Employee	-	-	1	2	4	1
Transport	20	-	19	12	36	13
Sericulture	40	15	8	24	54	20
Other	-	-	-	1	2	1
Observations	5	20	75	179	279	
Total Percentage	2	7	27	64		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Tab 30.3

Tertiary Employment by Age - Lampung
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	-	-	-	2	3	1
Farm Labor	-	-	-	3	4	2
Non-Farm Labor	-	18	27	18	41	20
Animal Husbandry	50	73	67	68	143	68
Trading	-	-	-	1	1	1
Storekeeper	-	-	2	-	1	1
Professional	50	9	4	6	13	6
Salaried Employee	-	-	-	1	1	1
Other	-	-	-	2	3	1
Observations	2	11	49	148	210	
Total Percentage	1	5	23	71		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

The older villagers tend to be the ones with more than one job. The percentage of those over 40 with primary employment is 45% and this percentage rises to 60% for tertiary employment. For those between 27 and 40 the percentage of jobs they hold drops from 26% for primary employment to 20% for tertiary employment. As observed in Korat, the work force over 40 is more prevalent in farming while those under 40 are more prevalent in farm labor. Older people are also more frequently employed in sericulture, but less frequently in "other" employment. A little more than half the jobs in primary employment are held by men and this proportion increases to two-thirds for secondary and tertiary employment. A higher percentage of men than women are employed in farming while the reverse is true for farm labor. Men also have a higher rate of participation in sericulture, 21% versus 14% for women, but they have a lower rate in "other" employment.

The remuneration for farming is primarily cash wage rather than crops, reflecting the large amount of cash crops in this area, such as cassava and sugar cane. A cash income is mentioned by 92% of those employed in farming versus 68% who mentioned a crop income. For sericulture, about half the workers receive a cash wage. Over one-fourth received meals and another one-fourth received "other" benefits, primarily woven products. In "other" employment, the employees received a cash income although 22% mentioned receiving a crop income. Only 36% of those involved in animal husbandry received a cash wage, presumably the rest received animals for use or sale.

The employment in farming generally extends over more than one season. This is also true for 60% of the jobs in farm labor. On the other hand, sericulture and animal husbandry occur almost entirely during the winter season. The "other" employment generally extends over more than one season (Table 29).

The variety of employment opportunities in Lampang is much greater than in the previously mentioned provinces (Tables 30.1 to 30.3). Farming and farm labor account for only 54% of the primary employment and 14% of the secondary employment. Nonfarm labor and "other" employment contribute 27% of the primary jobs, 18% of the secondary jobs, and 21% of the tertiary jobs. Handicrafts provide 4% of the primary employment and 24% of the secondary employment. Animal husbandry provides 68% of the tertiary employment. This variety in employment is probably due to the proximity of the villages in Lampang to an urban center. Many of the nonfarm and "other" jobs are associated with commerce or rural industrial activity. Because of these various opportunities, 79% of the sample have second jobs and 58% have third jobs.

The work force in Lampang (31.1 to 34) is weighted toward those over 40; they account for 61% of the primary job holders and their percentage increases to 71% for the tertiary job holders. The rate of participation in farming is highest for those over 40. In nonfarm labor sericulture, and "other" employment, those under 27 have higher rates of participation.

For primary employment, 54% of the jobs are held by males and the proportion increases to 66% in tertiary employment (Table 31). The participation rate for males and females is about equal in farm labor, but

Table 31

Employment by Sex - Lampung
(Percentage of Employees)

	PRIMARY		SECONDARY		TERTIARY	
	Male	Female	Male	Female	Male	Female
Farming	60	37	4	2	1	3
Farm Labor	4	7	11	10	2	1
Non-Farm Labor	6	14	16	20	23	13
Animal Husbandry	1	-	-	1	68	68
Professional	1	1	1	1	2	14
Trading	7	10	10	9	1	-
Craftsman	-	1	-	-	-	-
Handicraft	4	4	28	20	-	-
Storekeeper	-	-	-	-	1	1
Transport	1	-	13	13	-	-
Sericulture	1	-	16	25	-	-
Salaried Employee	6	3	2	-	-	1
Other	11	25	1	-	2	-
Observations	193	166	167	112	139	71
Total Percentage	54	46	60	40	66	34

males have a higher rate in farming. For nonfarm labor, sericulture, and "other" employment, the participation rate is higher for women. For animal husbandry, the participation rates are the same for the sexes.

The income from farming is mostly crops, but 43% indicated that they receive a cash income and 44% mention "other" remuneration (see Table 32). Farm labor is rewarded with cash in 68% of the cases, however, 40% mentioned receiving crops, 19% mentioned free meals, and 21% mentioned "other" remuneration. Only 54% of those working in animal husbandry receive a cash wage. The rest receive the use and sale of the animals. Handicrafts, nonfarm labor, sericulture, and "other" employment are rewarded principally with cash wages, although part of the production is received by 15% of those in nonfarm labor, 25% in handicrafts, 18% in sericulture, and 28% in "other" employment (Table 33).

The farming activity is more seasonal in Lampang than in other provinces (Tables 34.1 to 34.3). Only 62% of those in farming and farm labor indicate that they work more than one season. Most of the rest indicate that they are employed only during the rainy season. Nonfarm labor and "other" employment have a similar seasonality. Animal husbandry and sericulture activities occur either in the winter or summer season. Summer employment is greater than in other provinces with 47% of the sericulture jobs and 33% of the animal husbandry jobs occurring during this season.

In Songkla, the principal forms of employment are farming, farm labor and nonfarm labor (Tables 34.1 to 37). The former provided 82% of the primary employment, 70% of the secondary employment, and 43% of the tertiary employment. The villagers frequently listed farming as an occupation more than once to account for the distinction between rice, upland crops, and rubber trees. Farm labor accounts for 9% of the primary employment, 7% of the secondary employment and 27% of the tertiary employment, while nonfarm labor adds 2% to primary, 5% to secondary, and 27% to tertiary employment. Secondary and tertiary employment is smaller than in other provinces with only 64% of the sample having a second job and 18% having a third job. The work force is old with over two-thirds of those in primary and secondary jobs over the age of 40. Almost no employment is reported for those under 27, a common problem with the data for this and the next four provinces.

The job market is male dominated with men having three-fourths of the primary jobs and four-fifths of the secondary and tertiary jobs. The proportion of females in farming, farm labor and nonfarm labor is comparable to that for men, but the total number of women is much smaller (see Table 35).

As in other provinces, the remuneration for farm labor is principally crops (Table 36). For farm labor and nonfarm labor, the income is principally a cash wage. Farming and farm labor occur during more than one season for most of those employed. Less than half of the jobs in the nonfarm sector are limited to the winter season (Table 37).

In Chantaburi, farming and farm labor account for 89% of the primary employment, 70% of the secondary employment, and 80% of the tertiary

Table 32

Employment by Remuneration - Lampung
(Percentage of those in specified occupations)

Type of Employment	Form of Remuneration						Total Respondents
	Cash	Crop	Goods	House	Meal	Other	
Farming	43	93	2	-	4	44	188
Farm Labor	68	40	2	-	19	21	53
Non-Farm Labor	92	1	2	3	-	15	123
Animal Husbandry	54	3	-	2	-	-	145
Trading	100	-	-	-	4	25	57
Craftsmen	100	-	-	-	-	-	1
Handicraft	84	4	2	-	1	25	81
Professional	12	12	-	-	-	6	17
Salaried Employee	82	5	-	-	5	18	22
Transport	82	3	3	8	34	18	38
Sericulture	95	-	2	2	22	18	55
Other	79	12	1	-	3	28	67

Table 33

Employment by Season - Lampang
(Percentage of Employees)

Employment	Winter	Summer	Rainy	More than One Season	Total Number
Farming	1	3	32	63	188
Farm Labor	9	8	23	60	53
Non-Farm Labor	11	24	3	60	123
Animal Husbandry	66	33	1	1	145
Trading	11	-	-	89	57
Craftsman	-	-	-	100	1
Handicraft	21	5	2	72	81
Storekeeper	100	-	-	-	1
Professional	-	88	-	12	17
Salaried Employee	14	5	-	82	22
Transport	34	61	-	5	38
Sericulture	51	47	-	2	55
Other	30	1	3	66	67
Observations					
Total Percentage					

Primary Employment by Age - Songkla
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	100	100	78	83	252	82
Farm Labor	-	-	7	10	28	9
Non-Farm Labor	-	-	4	1	5	2
Trading	-	-	5	1	6	2
Handicraft	-	-	-	1	1	*
Salaried Employee	-	-	2	3	9	3
Fish Raising	-	-	2	-	2	1
Other	-	-	1	1	4	1
Observations	2	5	92	208	307	
Total Percentage	1	2	30	68		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Secondary Employment by Age - Songkla
(Percentage of Employees)

	AGE			TOTALS	
	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	33	72	69	136	70
Farm Labor	-	10	5	13	7
Non-Farm Labor	57	3	4	9	5
Animal Husbandry	-	-	8	11	6
Trading	-	3	9	14	7
Handicraft	-	5	1	4	2
Storekeeper	-	3	-	2	1
Professional	-	-	1	1	1
Salaried Employee	-	-	1	1	1
Other	-	3	2	5	3
Observations	3	60	133	196	
Total Percentage	2	30	68		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Table 34.3

Tertiary Employment by Age - Songkla
(Percentage of Employees)

	AGE			TOTALS	
	13 - 19	27 - 40	41 & Over	Observations	Percentage
Farming	-	50	39	24	43
Farm Labor	-	21	32	15	27
Non-Farm Labor	100	25	16	12	21
Handicraft	-	4	13	5	.9
Observations	1	24	31	56	
Total Percentage	2	43	55		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Employment by Sex - Songkhla
(Percentage of Employees)

	PRIMARY		SECONDARY		TERTIARY	
	Male	Female	Male	Female	Male	Female
Farming	83	80	70	69	37	86
Farm Labor	9	11	8	3	29	14
Non-Farm Labor	1	3	4	9	25	-
Animal Husbandry	-	-	6	6	-	-
Professional	-	-	1	-	-	-
Trading	3	1	7	12	-	-
Handicraft	-	1	3	-	10	-
Storekeeper	-	-	1	-	-	-
Salaried Employee	3	3	1	-	-	-
Fish Raising	1	-	-	-	-	-
Other	1	1	3	3	-	-
Observations	237	70	161	35	49	7
Total Percentage	77	23	82	18	88	13

Table 36

Employment by Remuneration - Songkhla
(Percentage of those in specified occupations)

Type of Employment	Form of Remuneration						Total Respondents
	Cash	Crop	Goods	House	Meal	Other	
Farming	63	89	-	-	-	1	412
Farm Labor	95	7	-	-	-	-	56
Non-Farm Labor	100	-	-	-	-	-	26
Animal Husbandry	82	36	-	-	-	18	11
Trading	100	5	-	-	-	-	20
Craftsmen	100	-	-	-	-	-	10
Storekeeper	100	-	-	-	-	-	2
Professional	100	-	-	-	-	-	1
Salaried Employee	100	-	-	-	-	-	10
Fish Raising	100	-	-	-	100	-	2
Other	100	-	-	-	-	-	9

Table 37

Employment by Season - Songkhla
(Percentage of Employees)

Employment	Winter	Summer	Rainy	More than One Season	Total Number
Farming	3	-	5	92	412
Farm Labor	5	-	5	89	56
Non-Farm Labor	46	-	4	50	26
Animal Husbandry	-	-	-	100	11
Trading	10	-	-	90	20
Handicraft	20	-	-	80	10
Storekeeper	-	-	-	100	2
Professional	100	-	-	-	1
Salaried Employee	-	-	-	100	10
Fish Raising	-	-	-	100	2
Other	11	-	-	89	9
Observations					
Total Percentage					

employment (see Tables 38.1 to 38.3). Other significant types of employment are fishing which accounts for 3%, 4%, and 4% of the primary, secondary and tertiary jobs, respectively, and trading which accounts for 2%, 13%, and 7%, respectively. Only 49% of the respondents have second jobs and about 18% have third jobs. A little more than one-half of the jobs are held by persons over 40 and a little over one-third by persons between 27 and 40.

The distribution of jobs by sex is similar for Chantaburi and Songkla: the males account for 72% of the primary employment and 80% of the secondary and tertiary employment. The proportion of men and of women in agriculture and trading is comparable, however the women tend to be more in farm labor and the men in farming. Fishing is done almost entirely by men (Table 39).

The income from farming is mostly in the form of crops although two-thirds of the respondents also listed cash incomes (see Table 40). For farm labor, the reverse is true: 91% indicated a cash income and 20% a crop income. The return on trading is entirely a cash income. For fishing, 78% indicated a cash income and 33% indicated the fish as a source of income. All of the occupations extend over more than one season and only a few percent of the respondents indicated that their jobs are seasonal (Table 41).

In Roi-et, almost all of the employment opportunities are in farming, which accounts for 93% of the primary employment, 68% of the secondary employment, and 42% of the tertiary employment (see Table 42.1 to 42.3). Farm labor provides very few jobs because of low productivity, single cropping, and small holdings. Handicrafts, jewelry, metal- and woodworking provide about 15% of the secondary employment while nonfarm labor and "other" employment (primarily weaving cloth and bamboo) account for 16% and 20%, respectively, of the tertiary employment. About 84% of the respondents hold second jobs and 42% hold third jobs. Many of the second and third jobs can be accounted for by the distinction between rice and upland crop cultivation. The age distribution of the work force is similar to that in Chantaburi: all age groups participated in the major occupations.

Only 30% of the work force is female and the percentage of females holding second and third jobs is about 25% (see Table 43). The proportion of males and of females in various types of employment is similar except in the tertiary "other" employment group which has 29% of the females and 17% of the males. The income from farming includes cash and crops, 74% mentioned the former and 89% mentioned the latter. Most of the other occupations provide a cash income although about one-third of those in farm labor, animal husbandry, handicrafts, and almost all those in fishing and sericulture also receive crops or products (Table 44).

Eight-five percent of those employed in farming indicated that it extends over more than one season, but farm labor, nonfarm labor, and handicrafts are more seasonable with 57%, 67%, and 88%, respectively, indicating only one season of employment (Table 45).

Table 38.1

Primary Employment by Age - Chantaburi
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	100	95	78	82	250	81
Farm Labor	-	5	9	7	23	8
Non-Farm Labor	-	-	2	1	4	1
Trading	-	-	2	2	5	2
Handicraft	-	-	-	1	1	*
Soldier	-	-	-	1	1	*
Salaried Employee	-	-	3	1	6	2
Fisherman	-	-	3	4	10	3
Other	-	-	3	2	8	3
Observations	1	19	117	171	308	
Total Percentage	1	6	38	56		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Secondary Employment by Age - Chantaburi
(Percentage of Employees)

	AGE			TOTALS	
	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	67	26	26	43	29
Farm Labor	33	42	41	62	41
Non-Farm Labor	-	4	-	2	1
Animal Husbandry	-	-	2	2	1
Trading	-	15	14	20	13
Salaried Employee	-	2	1	2	1
Transport	-	2	-	1	1
Fisherman	-	6	3	6	4
Other	-	6	12	13	9
Observations	9	55	87	151	
Total Percentage	6	36	58		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Table 38.3

Tertiary Employment by Age - Chantaburi
(Percentage of Employees)

	AGE			TOTALS	
	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	67	5	11	8	14
Farm Labor	33	64	75	37	66
Non-Farm Labor	-	9	4	3	5
Trading	-	18	-	4	7
Fisherman	-	-	7	2	4
Other	-	5	4	2	4
Observations	6	22	28	56	
Total Percentage	11	39	50		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Table 39

Employment by Sex - Chantaburi
(Percentage of Employees)

	PRIMARY		SECONDARY		TERTIARY	
	Male	Female	Male	Female	Male	Female
Farming	80	85	30	23	16	9
Farm Labor	8	6	35	67	62	82
Non-Farm Labor	1	1	2	-	7	-
Animal Husbandry	-	-	2	-	-	-
Trading	1	2	14	10	7	9
Handicraft	*	-	-	-	-	-
Transport	-	-	1	-	-	-
Soldier	*	-	-	-	-	-
Salaried Employee	2	1	2	-	-	-
Fisherman	3	4	5	-	4	-
Other	3	1	11	-	4	-
Observations	223	85	121	30	45	11
Total Percentage	72	28	80	20	80	20

Table 40

Employment by Remuneration - Chantaburi
(Percentage of those in specified occupations)

Type of Employment	Form of Remuneration						Total Respondents
	Cash	Crop	Goods	House	Meal	Other	
Farming	66	95	-	-	-	1	301
Farm Labor	91	20	-	-	3	-	122
Non-Farm Labor	100	-	-	-	-	-	9
Animal Husbandry	100	-	-	-	-	-	2
Trading	100	-	-	-	-	-	29
Craftsmen	100	-	-	-	-	-	1
Soldier	100	100	-	-	-	-	1
Salaried Employee	100	-	-	13	13	-	8
Transport	100	-	-	-	-	-	1
Fisherman	78	33	-	-	17	-	18
Other	61	22	13	-	-	4	23

Table 41

Employment by Season - Chantaburi
(Percentage of Employees)

Employment	Winter	Summer	Rainy	More than One Season	Total Number
Farming	1	-	1	99	301
Farm Labor	2	-	3	95	122
Non-Farm Labor	11	-	-	89	9
Animal Husbandry	-	-	-	100	2
Trading	14	-	-	86	29
Handicraft	-	-	-	100	1
Salaried Employee	-	-	-	100	8
Transport	-	-	-	100	1
Fisherman	6	6	6	83	18
Other	4	-	-	96	23
Observations					
Total Percentage					

Table 42.1

Primary Employment by Age - Roi-et
(Percentage of Employees)

	AGE			TOTALS	
	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	86	94	93	389	93
Farm Labor	7	1	-	4	1
Non-Farm Labor	3	1	-	3	1
Trading	-	-	1	2	1
Handicraft	-	1	1	3	1
Salaried Employee	-	1	-	2	1
Transport	-	-	-	1	*
Sericulture	-	1	-	1	*
Fisherman	3	-	2	6	1
Other	-	3	2	9	2
Observations	29	151	240	420	
Total Percentage	7	36	57		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Secondary Employment by Age - Roi-et
(Percentage of Employees)

	AGE			TOTALS	
	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	62	61	74	240	68
Farm Labor	4	2	1	5	1
Non-Farm Labor	-	5	1	8	2
Animal Husbandry	12	2	-	6	2
Trading	-	8	1	12	3
Handicraft	15	15	15	53	15
Salaried Employee	-	1	-	1	*
Sericulture	-	2	4	9	3
Fisherman	8	4	4	14	4
Other	-	-	3	5	1
Observations	26	131	196	353	
Total Percentage	7	37	56		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Table 42.3

Tertiary Employment by Age - Roi-et
(Percentage of Employees)

	AGE			TOTALS	
	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	46	30	49	76	42
Farm Labor	23	8	6	14	8
Non-Farm Labor	8	23	13	29	16
Animal Husbandry	-	3	-	2	1
Trading	-	7	2	6	3
Handicraft	8	5	5	9	5
Storekeeper	-	-	1	1	1
Salaried Employee	8	2	1	2	1
Sericulture	-	3		4	2
Fisherman	8	-	-	1	1
Other	-	20	23	36	20
Observations	13	61	106	180	
Total Percentage	7	34	59		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Table 43

Employment by Sex - Roi-Et
(Percentage of Employees)

	PRIMARY		SECONDARY		TERTIARY	
	Male	Female	Male	Female	Male	Female
Farming	92	94	66	73	43	41
Farm Labor	1	2	1	2	7	10
Non-Farm Labor	1	-	2	3	15	19
Animal Husbandry	-	-	2	2	1	-
Trading	-	2	4	2	4	-
Handicraft	1	-	16	13	6	2
Storekeeper	-	-	-	-	1	-
Transport	*	-	-	-	-	-
Sericulture	*	-	3	2	3	-
Salaried Employee	1	-	*	-	1	-
Fisherman	1	2	5	2	1	-
Other	2	3	2	1	17	29
Observations	293	128	257	96	138	42
Total Percentage	70	30	73	27	77	23

Table 44

Employment by Remuneration - Roi-et
(Percentage of those in specified occupations)

Type of Employment	Form of Remuneration						Total Respondents
	Cash	Crop	Goods	House	Meal	Other	
Farming	74	89	3	-	1	-	706
Farm Labor	87	30	-	-	9	-	23
Non-Farm Labor	98	3	-	3	-	-	40
Animal Husbandry	75	38	-	-	-	-	8
Trading	100	-	-	-	5	-	20
Craftsmen	92	-	32	-	-	-	65
Storekeeper	100	-	-	-	-	-	1
Salaried Employee	100	-	-	-	-	-	5
Transport	100	-	-	-	-	-	1
Sericulture	7	-	100	-	-	-	14
Fisherman	95	90	-	-	-	-	21
Other	36	16	50	-	8	-	50

Table 45

Employment by Season - Roi-et
(Percentage of Employees)

Employment	Winter	Summer	Rainy	More than One Season	Total Number
Farming	3	8	7	85	705
Farm Labor	22	17	17	43	23
Non-Farm Labor	68	-	-	33	40
Animal Husbandry	-	-	-	100	8
Trading	30	-	5	65	20
Handicraft	86	2	-	12	65
Storekeeper	-	-	-	100	1
Salaried Employee	20	-	-	80	5
Transport	-	-	-	100	1
Sericulture	7	-	7	86	14
Fisherman	14	14	-	71	21
Other	38	-	4	58	50
Observations					
Total Percentage					

The employment options in Udorn Thani, are more diverse than in Chantaburi or Roi-et. Secondary jobs are held by 72% of the sample and tertiary jobs by 31% (see Tables 46.1 to 46.3). Although farming accounts for 95% of the primary employment, and 35% of the secondary employment, other types of secondary employment are 10% farm labor, 10% nonfarm labor, 12% handicrafts, and 23% "other" employment. In tertiary employment, farm labor provides 20%, nonfarm labor 11%, handicrafts 9%, and "other" employment 43%.

Approximately one-third of the jobs are held by those between 27 and 40 and the rest by those over 40. As in Songkla, Chantaburi, and Roi-et, very little employment is reported for those under 27. About 30% of the primary, secondary, and tertiary job holders are women (Table 47). The participation rates by occupation is generally similar for men and women. Farming is rewarded by cash in 77% of the jobs and by crops in 91% of the jobs. Farm labor and nonfarm labor are provided with wage incomes. The latter also receive some housing and meals. Handicrafts and "other" employment are rewarded with cash wages for 37% and 39% of the respondents respectively, and with products for 80% and 49% of the respondents, respectively (see Table 48). Farming generally extends over more than one season, but farm labor and nonfarm labor are restricted to one season in 72% of the jobs. Over half of the employment in handicrafts and "other" employment is restricted to the winter season and another 38% of the "other" employment is limited to the summer season (see Table 49).

Chiang Mai has a variety of types of employment but not as many jobs as in other provinces (see Tables 50.1 to 50.3). The secondary and tertiary jobs are not as significant in other provinces with only 59% of the respondents having second jobs and 6% having third jobs. Agriculture remains dominant with 81% of the primary jobs, 68% of the secondary jobs, and 20% of the tertiary jobs in farming or farm labor. Nonfarm labor and "other" employment is largely generated by rural industries and commercial activities. It accounts for 11% of the primary jobs, 23% of the secondary jobs, and 65% of the tertiary jobs. About three-fourths of the 70% of the jobs are held by those over 40 and one-fourth by those between 27 and 40. Almost no employment is reported for those under 26. Less than one-fourth of the jobs are held by women and the percentage of women decreases in secondary and tertiary employment. The participation rate by women in different occupations is similar to that for men (see Table 51).

The remuneration for employment is largely cash wage except in farming, animal husbandry, and "other" employment where only 53%, 71%, and 77%, respectively, report cash incomes. Crops are a significant source of income not only in farming and farm labor, but also in animal husbandry (primarily the animals) and "other" employment (Table 52). Most of the jobs last more than one season but one-fourth of the nonfarm jobs, one-half the animal husbandry jobs and 58% of the "other" employment are limited to one season (Table 53).

Conclusions

The preliminary socio-economic data confirms the relative poverty of the provinces in the Northeast. In the survey sample the poorest villages

Table 46.1

Primary Employment by Age - Udorn Thani
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	100	100	94	95	372	95
Farm Labor	-	-	1	1	5	1
Trading	-	-	2	-	3	1
Storekeeper	-	-	-	-	1	*
Soldier	-	-	1	-	1	*
Salaried Employee	-	-	1	1	3	1
Sericulture	-	-	-	1	2	1
Other	-	-	1	1	6	2
Observations	3	11	138	241	393	
Total Percentage	1	3	35	61		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Table 46.2

Secondary Employment by Age - Udorn Thani
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	-	-	28	40	99	35
Farm Labor	100	-	13	8	28	10
Non-Farm Labor	-	17	15	7	28	10
Trading	-	-	6	6	15	5
Handicraft	-	33	16	9	34	12
Storekeeper	-	-	3	-	3	1
Administration	-	-	-	1	1	*
Transport	-	-	-	1	1	*
Sericulture	-	-	2	2	6	2
Fish Raising	-	-	-	1	2	1
Fisherman	-	-	-	1	1	*
Other	-	50	18	25	65	23
Observations	1	6	94	182	283	
Total Percentage	*	2	33	64		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Tertiary Employment by Age - Udorn Thani
(Percentage of Employees)

	AGE			TOTALS	
	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	-	15	12	15	13
Farm Labor	100	22	16	23	20
Non-Farm Labor	-	17	7	12	11
Trading	-	7	7	8	7
Handicraft	-	5	7	7	9
Storekeeper	-	2	-	1	1
Salaried Employee	-	-	2	1	1
Transport	-	-	3	2	2
Other	-	32	49	51	43
Observations	2	41	77	120	
Total Percentage	2	34	64		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Table 47

Employment by Sex - Udorn Thani
(Percentage of Employees)

	PRIMARY		SECONDARY		TERTIARY	
	Male	Female	Male	Female	Male	Female
Farming	96	93	33	40	16	5
Farm Labor	2	1	8	16	15	30
Non-Farm Labor	-	-	11	7	8	14
Trading	*	2	7	2	8	3
Handicraft	-	-	12	11	6	5
Storekeeper	*	-	2	-	1	-
Administrator	-	-	1	-	-	-
Transport	-	-	1	-	1	3
Sericulture	-	2	3	-	-	-
Soldier	*	-	-	-	-	-
Salaried Employee	*	2	-	-	1	-
Fisherman	-	-	-	1	-	-
Fish Raising	-	-	1	-	-	-
Other	2	2	23	22	43	41
Observations	266	127	201	82	83	120
Total Percentage	68	32	71	29	69	31

Table 48

Employment by Remuneration - Udorn Thani
(Percentage of those in specified occupations)

Type of Employment	Form of Remuneration						Total Respondents
	Cash	Crop	Goods	House	Meal	Other	
Farming	77	91	*	4	4	-	486
Farm Labor	98	5	2	-	2	-	56
Non-Farm Labor	98	-	-	10	15	-	40
Soldier	100	-	-	-	-	-	1
Trading	100	4	4	-	12	-	26
Handicrafts	37	2	80	-	-	2	41
Storekeeper	100	-	20	-	20	-	5
Administration	100	-	-	-	-	-	1
Salaried Employee	100	-	-	-	-	-	4
Transport	100	33	-	-	-	-	3
Sericulture	13	50	63	-	-	-	8
Fisherman	100	-	-	-	100	-	1
Fish Raising	100	100	-	-	-	-	2
Other	39	1	49	13	14	-	122

Table 49

Employment by Season - Udorn Thani
(Percentage of Employees)

Employment	Winter	Summer	Rainy	More than One Season	Total Number
Farming	1	11	1	87	486
Farm Labor	59	4	7	30	56
Non-Farm Labor	63	8	5	25	40
Trading	15	8	4	73	26
Handicraft	53	-	5	43	40
Storekeeper	-	-	-	100	5
Administration	-	-	-	100	1
Soldier	-	-	-	100	1
Salaried Employee	-	-	-	100	4
Transport	-	33	-	67	3
Sericulture	25	13	-	63	8
Fisherman	100	-	-	-	1
Fish Raising	-	-	-	100	2
Other	56	38	-	7	122
Observations					
Total Percentage					

Table 50.1

Primary Employment by Age - Chiang Mai
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	50	69	65	76	220	73
Farm Labor	-	15	13	5	23	8
Non-Farm Labor	25	8	10	7	24	8
Animal Husbandry	-	-	-	1	3	1
Trading	-	-	3	3	9	3
Handicraft	-	-	1	1	2	1
Storekeeper	-	-	-	1	1	*
Soldier	-	8	-	-	1	*
Salaried Employee	-	-	5	2	9	3
Other	25	-	3	3	10	3
Observations	4	13	77	208	302	
Total Percentage	1	4	25	68		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Secondary Employment by Age - Chiang Mai
(Percentage of Employees)

	AGE				TOTALS	
	13 - 19	20 - 26	27 - 40	41 & Over	Observations	Percentage
Farming	-	-	40	53	86	48
Farm Labor	-	-	16	22	36	20
Non-Farm Labor	100	25	21	9	23	13
Animal Husbandry	-	-	-	2	3	2
Trading	-	-	9	3	8	5
Handicraft	-	75	-	2	5	3
Other	-	-	14	9	18	10
Observations	1	4	43	131	179	
Total Percentage	1	2	24	73		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Table 50.1

Tertiary Employment by Age - Chiang Mai
(Percentage of Employees)

	AGE		TOTALS	
	27 - 40	41 & Over	Observations	Percentage
Farming	-	7	1	5
Farm Labor	20	13	3	15
Non-Farm Labor	20	33	6	30
Animal Husbandry	-	7	1	5
Trading	-	7	1	5
Handicraft	-	7	1	5
Other	60	27	7	35
Observations	5	15	20	
Total Percentage	25	75		100

Note: Total percentages may not add to 100 due to rounding.

- indicates percentage values equal to 0.0.

* indicates percentage values less than .5 and greater than 0.0.

Table 51

Employment by Sex - Chiang Mai
(Percentage of Employees)

	PRIMARY		SECONDARY		TERTIARY	
	Male	Female	Male	Female	Male	Female
Farming	77	62	6	-	49	46
Farm Labor	9	4	12	33	21	15
Non-Farm Labor	7	11	29	33	12	15
Animal Husbandry	*	3	-	33	1	77
Trading	2	7	6	-	3	10
Handicraft	-	3	6	-	2	5
Storekeeper	*	1	-	-	-	-
Soldier	-	1	-	-	-	-
Salaried Employee	3	3	-	-	-	-
Other	2	7	41	-	12	3
Observations	230	74	17	3	140	39
Total Percentage	76	24	85	15	78	22

Table 52

Employment by Remuneration - Chaing Mai
(Percentage of those in specified occupations)

Type of Employment	Form of Remuneration						Total Respondents
	Cash	Crop	Goods	House	Meal	Other	
Farming	53	87	-	-	1	-	309
Farm Labor	94	40	-	-	13	-	62
Non-Farm Labor	98	6	-	-	-	-	53
Animal Husbandry	71	43	-	-	-	-	7
Trading	100	-	-	-	-	-	18
Craftsmen	100	-	-	-	-	-	8
Storekeeper	100	-	-	-	-	-	1
Soldier	100	-	-	-	-	-	1
Salaried Employee	100	-	-	-	-	-	9
Other	77	11	-	-	-	-	35

Table 53

Employment by Season - Chiang Mai
(Percentage of Employees)

Employment	Winter	Summer	Rainy	More than One Season	Total Number
Farming	6	3	8	83	306
Farm Labor	3	-	6	90	62
Non-Farm Labor	25	-	2	74	53
Animal Husbandry	-	50	-	50	2
Trading	22	-	-	78	18
Handicraft	63	-	-	38	8
Storekeeper	-	-	-	100	1
Soldier	-	-	-	100	1
Salaried Employee	-	-	-	100	9
Other	29	-	29	43	35
Observations					
Total Percentage					

are in Srisaket and Roi-et while the wealthiest villages are in Chiang Mai, Lampang, and Songkla. The poor villages are in the greatest need of the simple technologies to meet basic needs, such as the woodlots and the improved charcoal kilns. The wealthier villages have populations which tend to be better educated, older, and more familiar with modern technologies. These are the provinces in which gasifiers, micro-hydro, and pyrolysis would be most suitable given the technical skills and the life style.

Education levels beyond the seventh year of school are not common and the technologies and training should not be directed at people with this education.

The design of the houses points to the existence of relatively large and permanent kitchens. Cooking is still done outside for certain foods in certain seasons, but most of the cooking is performed in walled-in rooms which have sufficient space for one or more of the family members to prepare and cook the food. Most of the food preparation and cooking is done while seated on the floor or squatting.

The use of brick and concrete form work in the home construction indicates a local ability for working with these materials.

The widespread ownership of radios is important as a method for introducing innovations. The use of portable transistor radios is common in both electrified and non-electrified villages. Televisions are less common and are generally limited to villages in a good receiving areas which have electricity. While televisions are not a good mode for spreading innovations, they are a potential source of demand for electricity. Since they can be operated off of rechargeable batteries, a relatively simple source of electricity can be used. Battery chargers and batteries are expensive ways of delivering electricity but one television serves many people in a village.

Water pumps are important in Chiang Mai, Petchaburi, Lampang, and Chantaburi. Many of the villages in these provinces are electrified. Where they are not a small-scale power source for operating pumps would be useful. Alternative methods for water-lifting should also be considered.

Other possessions commonly owned which require the use of electricity are fans and electric irons.

Tractors have largely replaced animals for farm labor in Petchaburi and Kamphangphet. They are also widely used in the villages in Korat, Chantaburi, and Songkla. Biogas units would probably lack sufficient manure for operation in the first two provinces; however, mobile gasifiers for use with tractors might be a useful technology. The availability of animal manure for biogas in the other three provinces should also be reviewed.

Most villages have one or more small rice mills to prepare rice for local consumption and sometimes for outside sale. These mills are important as a source of rice husks for making charcoal and bricks and as a source of bran for animal feed. These mills can also be used as a

source of shaft power for operating small electrical generating units. Though these units are not included in the project they would be useful for establishing initial demand for electricity. The greatest difficulty in using a rice mill motor with a generator is the problem of maintaining a constant speed under a varying load. Various voltage controllers and load shedding devices can be obtained at relatively low cost. Although these are a sophisticated technology, they have low operating skill and maintenance requirements. The pyrolytic converters and small gasifier technologies might also be used to power the mill using rice husks.

The ownership of portable diesel engines for use in agriculture, transport, and waterlifting should be considered as a possible user of gasifiers or pyrolytic oils.

The ownership, control, and cultivation of land is important for this project because the land is a source of agricultural residues which can be used as fuels. The percentage of families owning no land is 15% or more in all provinces, except Petchaburi, Roi-et, and Songkla. However, many families supplement the land they own with free land from either the public land or their parents land. Other families rent or sharecrop land in order to have a sufficient area for cultivation. For the families that own land the average amount owned is between 18 and 25 rai in all provinces, except Lampang and Chiang Main where it is less and Kampanghet where it is more.

Competition for land is a significant factor in all provinces and the availability of marginal land for woodlots is limited. Although the villagers are aware of the requirement for more land especially in the future, they do not have any firm ideas on how to obtain more land. As encroachment on public land and on formerly wooded areas increases, the options for establishing woodlots will become more limited.

The renewable energy technologies will benefit all members of the village families because most responsibilities are shared by men and women and by young and old. Although more men than women are directly involved in agriculture, the role of women is especially important during the periods of planting and harvesting. More men gather fuel and more women collect water, but there is not a significant segregation of these activities. Young people are usually asked to care for animals and to gather water, while the older people help with the farming and collect fuel, but there is no fixed divisions of responsibility between young and old. Since all members of the family participate in fuel collection, farming, and gathering water, the benefits from the various technologies will be received by all family members. At the same time, because the responsibilities are shared, the least employed is often asked to perform a task. Therefore, the savings in time from fuel conserving, waterlifting, or crop cultivating technologies may not be perceived as important relative to other needs.

Most of the villagers have more than one form of employment. Some income-earning activities are seasonal, but the main occupation, farming, extends over more than one season. The employment data indicates a relatively active populace. The introduction of technologies which require labor either at the initial stage or for operation must be

carefully planned to correspond to the seasons in which slack labor is available or to the population which is underemployed. Even older people tend to have two jobs, the first in agriculture and the second in handicrafts. They are probably the best target population from which to recruit operational personnel unless technical sophistication is required.

The most appropriate season for construction is following the major harvest in the winter or early in the summer.