

C. SOCIAL CONDITIONS

APPENDIX C. SOCIAL CONDITIONS

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1. The List of Village for Social Assessment

The List of Village for Social Assessment in the Study Area (1/2)

Province	Name of Forest	LRA (rai)	Name of Village for Interviewing				
			Amphoe	Tambon	No. of H.H	Name of Village	
Khon Kaen	Phu Ra Ngam	68,125	Chonabot	Non Phayom	21	Nong Tao Nong Kham Wang Sacng	
	Sawathi	15,375	Muang	Sawathi	7	Lad Na Piang	
	Khok Luang (Plot 3)	19,700	Manchakiri	Na Ngam Na Pang	21	Don Kaen Tao Non Ngam Wang Wa	
	Khok Talat Yai	11,450	Ban Fang	Pa Ma Nao	7	Kham Hua Chang	
	Dong Sam	6,525	Nam Pong	Ban Kham	7	Lao Yai Mu 8	
	Non Nam Baeng	152,343	Ban Phai	Ban Han Par Por Wang Muang Por Daeng	28	Nong Nam Khun Nua Sua Tao Sok Nark Mab Ta Kia	
					91		
	Mahasarakham	Khok Khao	1,613	Chieng Yun	Lao Dorkmai	6	Som Kob
		Din Daeng and Wang Kung	69,747	Kosumphisai	Wang Yao Phang	12	Hin Hae Hua Na Khum
Khok Hin Lard		2,275	Muang	Bua Kho	6	Nong Khun	
Khok Kham Poom		10,625	Muang	Ta Song Khon	6	Hin Lat	
Khok Phuk Kut and Pong Daeng		12,050	Borabu	Non Daeng	6	Non Thong	
Nong Khu and Na Dun		20,065	Na Dun Na Chuk	Nong Khu Nong Rua	12	Lao Chan Khok Lam	
Dong Ken and Nong Ya Prong		10,937	Borabu	Bor Yai	6	Dong Keng Mu 6	
Kut Rang		80,402	Kut Rang Borabu	Na Pho Wang Mai Nong Khu Kat	24	Non Somboon Wang Plado Soak Para	
Khok Sum Rong and Bor Pan		388	Kut Rang Na Chuk	Huai Toei Nong Mek	6	Nong Saeng Lao E Man	
Khok Rai		5,762	Chieng Yun	Chieng Yun	6	Nong Mamo	
				90			

The List of Village for Social Assessment in the Study Area (2/2)

Province	Name of Forest	LRA (rai)	Name of Village for Interviewing			
			Amphoc	Tambon	No. of H.H	Name of Village
Sakon Nakhon	Dong Mo Thong	24,600	Ban Muang	Dong Mo	7	Dong Mo Thong
	Dong Pha Lat	36,775	Sawang Daen Din	Thong Tai Khok See	7	Dong Nong Phai
	Kut Hai Na Nai Non Udom	139,813	Phanna Nikhom	Na Nai	21	Na Lao Nong Phu Phak Kham Phu
	Khok Phu Na Mong	87,700	Kut Bak	Na Mong	7	Phon Ngam
	Dong Chomphu Phan and Dong Kachoc	69,350	Muang King A. Phu Phan	Huai Yang Sang Kho Loop Lao	21	Lat Somboon Lat Kachoc Chom Phu Phan Nua Song Sim Patana
	Phu Wong	40,956	Warich Phum	Kham Bo	7	Tung Chuk
	Dong I Bang Dong Kham Phlu and Dong Kham Kang	16,950	Akat Amnuai	Ta Kon	7	Ta Kon
					77	
Mukdahan	Dong Bang I (Plot1)	109,055	Muang	Na Sok Phon Sai	12	Iao Pa Pet Na Thon Yai
	Dong Bang I (Plot2)	56,292	Dontan	Lao Mi	6	Pa Pha Yom
	Dong Bang I (Plot3)	103,958	Nikhom Khum Soi	Na Udom	6	Khon Kaen
	Dong Bang I (Plot4)	1,387	Don Tan	Pa rai	6	Nong Mek
	Dong Bang I (Plot5)	6,450	Nong Soong	Nong Soong Tai	6	Loop Ping
	Dong Bang I (Plot6)	700	Nong Soong	Nong Soong Tai	6	Khok Klang
	Dong Phu Si Than	47,150	Nong Seong	Non Yang	6	Wang Nong
	Dong Phu Phan	64,800	Dong Luang	Dong Luang Dong Luang Phang Dang Phang Dang	31	Phon Dang Soak Phon Sawang Phang Daeng
	Dong Mu	43,529	Muang	Kham Pa Lai Ban Khok	6 6	Na Sua Lai Pa Wai
	Dong Mu (Plot 1)	1,281	Dong Luang	Cha Nod Noi	6	Cha Nod Noi
	Dong Mu (Plot 2)	11,394	Muang	Kham Pa Lai	6	Kang
	Dong Mu (Plot 3)	12,237	Dong Luang	Kok Tom	6	Na Hin Kong
						109
Grand Total					367	

2. Questionnaire of Social Assessment.

SOCIAL ASSESSMENT INTEGRATED AGRICULTURAL DEVELOPMENT PROGRAM IN LAND REFORM AREAS IN UPPER NORTHEAST THAILAND

Name of Study Area _____

Name of Respondent _____ Name of Interviewer _____

Respondent's Address _____ Ethnic Group _____

Date of Interviewing Jan /Feb. 1997 Duration of Interview _____ hr. _____ min.

1. Socio-Economic Data

1.1 Age _____

1.2 Sex

male

female

1.3 Education

no education

primary

secondary

other (specify) _____

1.4 No. of household members _____

No. of household members who practice farm work _____

No. of household members who practice off-farm work _____

1.5 Duration of present settlement

since I was born No. of years _____

moved in No. of years _____

Reason for migration _____

Were your ancestors used to live in this community?

no

yes

1.6 Pattern of occupation in the wet season (more than one answer)

Pattern of Occupation	Farm Size or Quantity	Total Yield (kg.)	No. of HH Members	Average Income		
				Normal Year (bath)	Maximum (% of normal year)	Minimum (% of normal year)
1.6.1 Rice farming						
1.6.2 Upland cropping (specify) _____						
1.6.3 Vegetable gardening _____						
1.6.4 Animal husbandry _____						
1.6.5 Fishery						
1.6.6 Sericulture						
1.6.7 Employment						
1.6.8 Other (specify) _____						

Total Household Income (wet season)

1.7 Pattern of occupation in the dry season (more than one answer)

Pattern of Occupation	Farm Size or Quantity	Total Yield (kg.)	No. of HH Members	Average Income		
				Normal Year (baht)	Maximum (% of normal year)	Minimum (% of normal year)
1.6.1 Rice farming						
1.6.2 Upland cropping (specify) _____						
1.6.3 Vegetable gardening _____						
1.6.4 Animal husbandry _____						
1.6.5 Fishery						
1.6.6 Sericulture						
1.6.7 Employment						
1.6.8 Other (specify) _____						

Total Household Income (dry season)

1.8 Average annual remittance obtained from son/daughter who works outside the village

1.9 Size of land ownership _____ rai

1.10 Size of land rented _____ rai No land rented

1.11 In case of renting land, how do you pay per crop or what is the agreement?

1.12 Who is the land owner?

a person who lives in the village, his/her occupation is _____

a person who lives outside the village, his/her occupation is _____

1.13 Do you have debt? and how?

no

yes, the amount is _____
source(s) of loan _____

BAAC

Coop.

local money lender

other (specify) _____

1.14 Are you able to repay debt as scheduled?

yes

no, because _____

1.15 Do you or your household members work outside the village in the dry season? How?

HH members who work outside the village	Where to?	Duration	Kind of Job	Average income/month
	<input type="checkbox"/> within the province	<input type="checkbox"/> commuting <input type="checkbox"/> less than 3 mths.	<input type="checkbox"/> industry <input type="checkbox"/> agriculture	
	<input type="checkbox"/> other province	<input type="checkbox"/> less than 3 mths.	<input type="checkbox"/> service	
	<input type="checkbox"/> Bangkok		<input type="checkbox"/> skilled labor	
HH head				
wife				
son (s) # _____				
daughter # _____				

1.16 Reason for working outside the village in the dry season _____

- need cash
- cannot practice cropping because of water shortage
- other (specify) _____

1.17 In agriculture, what problem(s) do you face? and How?

Problem (s)	Wet Season (detailed information)	Dry Season (detailed information)
Water	<input type="checkbox"/> water shortage <input type="checkbox"/> inadequate water sources	<input type="checkbox"/> water shortage <input type="checkbox"/> inadequate water source
Inputs (seed, fertilizer, pesticide, etc.)	<input type="checkbox"/> not available in the local market <input type="checkbox"/> expensive	<input type="checkbox"/> not available in the local market <input type="checkbox"/> expensive
Transportation of farm products to the market	<input type="checkbox"/> far from the market <input type="checkbox"/> high cost of transportation	<input type="checkbox"/> far from the market <input type="checkbox"/> high cost of transportation
Market of farm products	<input type="checkbox"/> no market outlet <input type="checkbox"/> low price	<input type="checkbox"/> no market outlet <input type="checkbox"/> low price
Debt	<input type="checkbox"/> source of loan _____	<input type="checkbox"/> source of loan _____
	<input type="checkbox"/> amount _____ baht	<input type="checkbox"/> amount _____ baht
Soil fertility	<input type="checkbox"/> acidity <input type="checkbox"/> salinity	<input type="checkbox"/> acidity <input type="checkbox"/> salinity
Others (specify) _____	Others (specify) _____	Others (specify) _____

1.18 Are you interested in changing pattern of cropping from monocropping to integrated farming?

- no, because _____
- yes

1.19 Have you or other HH members used to practice upland cropping somewhere else (where you do not own or rent the land)?

- no
- yes, where? _____
what kind of crop? _____

1.20 How frequent do you or other HH members go to the forest to collect fuel wood or search for food? and How?

Frequency of collecting forest products	Wet Season	Dry Season
<input type="checkbox"/> never	<input type="checkbox"/> collecting fuel wood <input type="checkbox"/> searching for food <input type="checkbox"/> other (specify) _____	<input type="checkbox"/> collecting fuel wood <input type="checkbox"/> searching for food <input type="checkbox"/> other (specify) _____
<input type="checkbox"/> every week	_____	_____
<input type="checkbox"/> every month	_____	_____
<input type="checkbox"/> every 3 months	_____	_____
<input type="checkbox"/> other (specify)	_____	_____

2. Gender Role in the Community

2.1 In practicing cropping, how is the division of labor between male and female? (considering major role)

Activity	Rice Farming			Upland Cropping			Vegetable Gardening		
	Male	Female	Male & Female	Male	Female	Male & Female	Male	Female	Male & Female
Land Preparation									
Seedling									
Fertilizer Application									
Pesticide Application									
Irrigation									
Harvesting									
Marketing									
Money Saving									

2.2 In animal husbandry/sericulture, how is the division of labor between male and female? (considering major role)

Activity	Pig Farming			Cattle Raising			Sericulture		
	Male	Female	Male & Female	Male	Female	Male & Female	Male	Female	Male & Female
Searching Fodder									
Feeding									
Cleaning Area									
Getting Silk Fibre									
Marketing									

2.3 What kind of handicraft or household industry that men and women have been involved in the dry season at the present time? and How?

Men's Activity

1. _____ material used: _____
 2. _____ material used: _____

Women's Activity

1. _____ material used: _____
 2. _____ material used: _____

2.4 At present, do you or household member(s) have problem in doing handicraft or household industry?

no not applicable, not been involved

yes (specify) _____

local material e.g. bamboo is rare

having limited market outlet

other (specify) _____

2.5 In the Future, do you or household member(s) have any plan for handicraft or household industry? How?

no yes (how?) _____

3. Group or Local Organizational Membership

3.1 Do you belong to any group or local organization? How?

3.1.1 No, because _____

3.1.2 Yes (specify) _____

- BAAC
- Agricultural Cooperative
- Saving for Production
- Farmer Housewife
- Handicraft e.g. cloth/bamboo weaving
- Farmer
- Other (specify) _____

3.2 Beside rain water, do you used water from other source for agriculture? How?

- no
- yes (specify name of water source)
e.g. creck, natural pond
- farm pond
- voluntary weir
- people's weir

3.3 Do farmers who share water from the same source organize as water user group?

- no
- yes

3.4 How does water user group set up rules and regulation over water use? (more than one answer)

- soaking kenaf in water source is forbidden
- soaking animal in water source is forbidden
- keeping water for one person's use is forbidden
- water scheduling
- maintaining farm ditches
- other (specify) _____

3.5 In case of water shortage, is there conflict over water use, i.e. water stealing?

- no, because _____
- yes, how to slove the problem _____

3.6 In sloving the problem of water shortage, how did farmers try to be self-help?

- use pumping machine
- dig deep tube well
- dig farm pond
- other (specify) _____

4. Farmers' Expectation about Development Project

4.1 Have you heard about ALRO's development project?

- no
- yes, from whom? _____

4.2 To increase rice production in the wet season, what kind of assistance or need do you expect from the government agencies? and what is the degree of expectation?

4.2.1 Water source development for reseryation

- high
- medium
- low

- 4.2.2 Improving soil fertility
 high medium low
- 4.2.3 Application of high yield seed
 high medium low
- 4.2.4 Providing credit for production
 high medium low
- 4.2.5 Other (specify) _____
 high medium low
- 4.3 To increase upland cropping (specify) _____
 What kind of assistance or need do you expect from the government agencies? and how is the degree of expectation?
- 4.3.1 Solving problem of water shortage
 high medium low
- 4.3.2 Improving soil fertility
 high medium low
- 4.3.3 Application of high yield variety
 high medium low
- 4.3.4 Providing loan or credit for production
 high medium low
- 4.3.5 Marketing of products
 high medium low
- 4.3.6 Price of products
 high medium low
- 4.3.7 Other (specify) _____
 high medium low
- 4.4 If the government agencies are going to promote dry season cropping to help increase farmer's income, do you approve? and how?
 disapprove, because _____
 approve _____
- 4.5 In case of approving, what kind of assistance or need did you expect from the government agencies? and How?
- 4.5.1 Water source development for reservation
 high medium low
- 4.5.2 Training on method of cropping as demanded
 high medium low

4.5.3 Improving soil fertility
 high medium low

4.5.4 Other (specify) _____
 high medium low

5. Possibility of Local People Participation in Development Project

5.1 If the government's development project is planned to solve the problem of water shortage, what is the possibility for you to participate in the project?

- labor contribution
- land devotion for construction
- cash contribution (specify the maximum amount) _____ baht
- providing information that is useful for planning of implementation
- other (specify) _____

5.2 Are you interested in attending in training course on method of cropping as demanded by the market?

- no, because _____
- yes

5.3 Are you interested in attending the training course on integrated farming?

- no, because _____
- yes

5.4 Are you interested in attending technology transfer on improving soil condition?

- no, because _____
- yes

5.5 Are you interested in attending the training course on handicraft/household industry?

- no, because _____
- yes

5.6 Are you interested in attending other training course besides what already mentioned?

- no, because _____
- yes

5.7 If the government's reforestation project is to be implemented closed to your community, are you interested in participating in the project?

- no, because _____
- yes

5.8 If the government is to implement community forest project, are you interested in participating in the project?

- no, because _____
- yes

Remark: (if additional information is provided) _____

3. Social Assessment Report

**JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
AGRICULTURAL LAND REFORM OFFICE (ALRO), MOAC
THE KINGDOM OF THAILAND**

**FEASIBILITY STUDY
ON
INTEGRATED AGRICULTURE DEVELOPMENT
IN
AGRICULTURAL LAND REFORM AREAS
IN
THE UPPER NORTHEASTERN REGION
OF
THE KINGDOM OF THAILAND**

**PROGRESS REPORT (I)
SOCIAL ASSESSMENT**

MARCH, 1997

SANYU CONSULTANTS INC.

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AGRICULTURAL LAND REFORM STUDY AREAS

Introduction

The Agricultural Land Reform Study Area covers the declared and potential Land Reform Areas in four Northeastern provinces: Sakon Nakhon, Mukdahan, Maharakham and Khon Kaen.

In principle, any land reform program should aim at preventing individuals from owning too much land and distributing surplus land to poor and landless farmers. However, the meaning of land reform in Thailand is "the process of offering land rights to people who occupy degraded forest land."¹

The Thai abbreviation, Sor Por Kor 401, stands for the land reform documents issued to the recipient to guarantee their legal right to the land. In practice, the Agricultural Land Reform Office (ALRO) issues land ownership rights for public land that some farmers have been occupying long before the areas were declared degraded forest land.

The 7th and the 8th National Economic and Social Development Plans (1992-1996, 1997-2001) state that income disparity between the rich and the poor has to be decreased and agricultural development is to be promoted to improve the farmers' quality of life.

Social Setting

Different ethnic groups are found in the study area, particularly in Sakon Nakhon and Mukdaharn. Although a majority of the study area residents are Thai Esan or Thai Lao, each ethnic group speaks a different dialect and most of them are Buddhists. Besides Thai Esan in Sakon Nakhon and Mukdaharn, other ethnic groups are identified as Phutai, Thai Yow, Soh, Thai Kalerng, Thai Ka Tak, Thai Yoy, Thai Kha, Thai Saek and Thai Kula, among others. Ethnic groups are not the problem in the study area. Each group is scattered over different districts and their houses are close to each other's. In Maharakham and Khon Kaen, Thai Esan is the dominant group.

Around 29,000 people live in 6,800 households in some of the selected villages in the study area in the four provinces. The average number of household members range from 3 to 6. Table 1 shows basic characteristics of population distribution.

Of the respondents of the survey, approximately one-third (33 per cent) are female and 67 per cent are male. Their average age is 49 years. About 80 per cent of the respondents have primary education, 8 per cent have no education, and 12 per cent have higher than primary education. More than half (58 per cent) reported the number of household members between 4-6 persons, 9 per cent have 1-3 persons, and 33 per cent have more than 7 persons. About 77 per cent have 1-4 household members engaged in farm work, 1 per cent have no household members involved in farm work, while 22 per cent have more than 5 persons who practice farm work.

The majority of the respondents (51 per cent) have lived in the present settlement for more than 40 years, 33 per cent have lived there for 21-40 years, 9 per cent have lived there for 11-20 years and 6 per cent have lived there for 10 years or less. Table 2 details characteristics of the respondents classified by province.

Table 1 Population Profile of Some Selected Villages in the Study Area

Study Area / Village	No. of HHs	Population	Average No. of HH members
<u>Sakon Nakhon</u>			
1. Dong Mho Thong Dong Mho Thong	215	1,086	5
2. Dong Pha Lad Nong Phai	304	-	-
3. Kud Hai, Na Ni, Non Udom Nong Phuo	127	649	5
Phak Kham Poo	407	1,946	5
Na Tan	76	385	5
Na Lao	118	606	5
4. Kok Poo, Na Muang Phon Ngam	263	1,551	6
5. Poo Wong Thung Chouk	604	-	-
Total	2,114	6,223	5
<u>Mukdaharn</u>			
1. Dong Bang E (Plot 1) Lhao Pa Ped	139	862	6
Na Thon Yai	-	-	-
2. Dong Bang E (Plot 2) Pa Pha Yom	105	556	5
3. Dong Bang E (Plot 3) Khon Kaen	68	353	5
4. Dong Bang E (Plot 4) Nong Lek	-	-	-
5. Dong Bang E (Plot 5) Loop Ping	90	413	5
6. Dong Bang E (Plot 7) Khok Klang	100	444	4
7. Dong Poo Si Than Wang Nong	114	495	4
8. Dong Poo Pan Pon Daeng	79	576	7
Pang Daeng	158	851	5
Pon Sawang	75	372	5
Sok	67	322	5
9. Dong Mhoo Na Sua Lai	128	672	5
Pha Wai	96	585	6
10. Dong Mhoo (Plot 1) Chanode Noi	-	-	-

Table 1 Population Profile of the Study Area (Cont'd)

Study Area / Village	No. of HHs	Population	Average No. of HH members
11. Dong Mhoo (Plot 2) Khang	202	1,220	6
12. Dong Mhoo (Plot 3) Na Hin Kong	225	790	4
Total	<u>1,646</u>	<u>8,511</u>	<u>5</u>
<u>Mahasarakham</u>			
1. Khok Khaw Som Kob	118	524	4
2. Din Daeng - Wang Kung Hin Hae	93	357	4
Hua Na Kam	82	414	5
3. Kok Hin Lad Nong Koon	83	366	4
4. Kok Kham Pom Hin Lad	202	993	5
5. Kok Phak Good - Pong Daeng Non Thong	114	685	6
6. Nong Koo - Na Doon Lao Jan	119	618	5
Kok Lam	69	480	7
7. Dong Keng - Nong Ya Plong Dong Keng	185	1,040	6
8. Kud Rang Non Som Boon	-	-	-
Wang Pla Do	140	718	5
Sokpara	271	1,202	4
Nong Saeng	-	-	-
9. Kok Sam Rong - Boh Pan Lao E Man	82	399	5
10. Kok Rai Nong Ma Mouth	94	404	4
Total	<u>1,652</u>	<u>8,200</u>	<u>5</u>
<u>Khon Kaen</u>			
1. Poo Ra Ngam Nong Tao	104	557	5
2. Sawathi Lad Na Piang	308	1,732	6
3. Khok Luang (Plot 3) Don Kaen Tao	27	73	3
4. Khok Talat Yai Kham Hua Chang	4	-	-
5. Dong Sam Lao Yai	103	518	5

Table 1 Population Profile of the Study Area (Cont'd)

Study Area / Village	No. of HHs	Population	Average No. of HH members
6. Non Nam Baeng			
Nong Nam Khoon Nuo	156	940	6
Sua Tao	75	211	3
Sok Nak	481	1,208	3
Mab Ta Kra	97	589	6
<u>Total</u>	<u>1,355</u>	<u>5,828</u>	<u>5</u>

Source : Village Level Data of Sakon Nakhon, Mukdaharn, Mahasarakham, and Khon Kaen in 1994.

- = No data available.

Table 2 Characteristics of Respondents Classified by Province

Characteristics	Sakon Nakhon	Mukdaharn	Maharakam	Khon Kaen	Total
Gender					
Male	61.0 (47)	62.4 (68)	85.7 (78)	58.2 (53)	66.8 (246)
Female	39.0 (30)	37.6 (41)	14.3 (13)	41.8 (38)	33.2 (122)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Age					
Less than 30	1.3 (1)	11.0 (12)	4.4 (4)	4.4 (4)	5.7 (21)
30-39	13.0 (10)	18.3 (20)	12.1 (11)	19.8 (18)	16.0 (59)
40-49	23.4 (18)	36.7 (40)	29.7 (27)	25.3 (23)	29.3 (108)
50-59	32.5 (25)	17.4 (19)	39.6 (36)	39.6 (36)	31.5 (116)
60-69	20.8 (16)	12.8 (14)	11.0 (10)	7.7 (7)	12.8 (47)
70 +	9.1 (7)	3.7 (4)	3.3 (3)	3.3 (3)	4.6 (17)
Mean = 49 years					
Education					
No Education	3.9 (3)	15.7 (17)	2.2 (2)	8.8 (8)	8.4 (31)
Primary	88.3 (68)	67.6 (73)	83.5 (76)	84.6 (77)	79.9 (294)
Secondary	3.9 (3)	13.9 (15)	13.2 (12)	4.4 (4)	9.2 (34)
Others	3.9 (3)	(4)	1.1 (1)	2.2 (2)	2.4 (9)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
No. of HH members					
1-3	13.0 (10)	6.4 (7)	6.6 (6)	11.0 (10)	9.0 (33)
4-6	55.8 (43)	56.0 (61)	60.4 (55)	60.4 (55)	58.2 (214)
7-9	28.6 (22)	30.3 (33)	27.5 (25)	23.1 (21)	27.4 (101)
10 +	2.6 (2)	7.3 (8)	5.5 (5)	5.5 (5)	5.4 (20)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
No. of HH Members in Farm Work					
0	3.9 (3)	0.9	1.1 (1)	-	1.4 (5)
1-2	28.6 (22)	35.8 (39)	39.6 (36)	48.4 (44)	38.3 (141)
3-4	41.6 (32)	36.7 (40)	39.6 (36)	36.3 (33)	38.3 (141)
5-6	15.6 (12)	13.8 (15)	17.6 (16)	13.2 (12)	14.9 (55)
7-8	9.1 (7)	9.2 (10)	2.2 (2)	2.2 (2)	5.7 (21)
9 +	1.3 (1)	3.7 (4)	-	-	1.4 (5)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
No. of Years in Present Settlement					
≤ 10	6.5 (5)	7.3 (8)	6.6 (6)	4.4 (4)	6.3 (23)
11-20	20.8 (16)	5.5 (6)	7.7 (7)	5.5 (5)	9.2 (34)
21-30	15.6 (12)	17.4 (19)	13.2 (12)	12.1 (11)	14.7 (54)
31-40	11.7 (9)	15.6 (17)	17.6 (16)	28.6 (26)	18.5 (68)
41 +	45.5 (35)	54.1 (59)	54.9 (50)	49.5 (45)	51.4 (189)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Forebears used to live in Community ?					
No	49.4 (38)	20.2 (22)	26.4 (24)	24.2 (22)	28.8 (105)
Yes	50.6 (39)	79.8 (87)	73.6 (67)	75.8 (69)	71.2 (262)

Source : Study Team Survey, January 1997.

Economic Setting

Table 3 shows wet season occupational patterns in the study area. Rice farming, cassava cultivation and livestock production are the three major economic activities in the wet season. Rice grown in the study area is glutinous rice. The average rice yield per rai varies from one study area to another. In Sakon Nakhon, Mukdaharn, Mahasarakham, and Khon Kaen, average rice yield is 325, 271, 277 and 178 kilograms per rai respectively. Table 4 shows average rice yield in each study area and income per household. Almost all of this income comes from crops produced, farm employment and livestock production. Household income ranges from 9,293 to 22,754 baht.

Cassava is commonly grown in the upland areas in the study area. The farmers usually begin land preparation during January and February and grow cassava when it starts raining. It takes 8-9 months before cassava can be harvested during December to January. In the dry season, some people find jobs outside the village while others earn no cash.

Livestock production is practiced in every study area. Chicken and ducks are raised mainly for domestic consumption. Pigs and cattle are raised for sale. However, some households keep their buffaloes for ploughing.

Table 3 Wet Season Occupational Pattern in the Study Area

SAKON NAKHON Study Area / Village	Wet Season Occupational Pattern		
	Rice Farming	Cassava	Livestock Production
1. Dong Mho Thong Dong Mho Thong	X	X	X
2. Dong Pha Lad Nong Phai	X	X	X
3. Kud Hai, Nai, Non Udom Nong Phuo Phak Kham Poo Na Tan Na Lao	X X X X	X X X X	X X X X
4. Kok Poo, Na Muang Phon Ngam	X	X	X
5. Poo Wong Thoung Chouk	X	X	X

Source : Basic Village Level Data, Sakon Nakhon, 1994.

Table 3 Wet Season Occupational Pattern in the Study Area (Cont'd)

MUKDAHAN Study Area / Village	Wet Season Occupational Pattern		
	Rice Farming	Cassava	Livestock Production
1. Dong Bang E (Plot 1) Lhao Pu Ped Na Thon Yai	X -	X -	X -
2. Dong Bang E (Plot 2) Pa Pha Yom	X	X	X
3. Dong Bang E (Plot 3) Khon Kaen	X	X	X
4. Dong Bang E (Plot 4) Nong Lck	-	-	-
5. Dong Bang E (Plot 5) Loop Ping	X	X	X
6. Dong Bang E (Plot 7) Khok Klang	X	X	X
7. Dong Poo Si Than Wang Nong	X	X	X
8. Dong Poo Pan Pon Daeng Pang Daeng Pon Suwang Sok	X X X X	X X X X	X X X X
9. Dong Mhoo Na Sua Lai Pha Wai	X X	- X	X X
10. Dong Mhoo (Plot 1) Cha Node Noi	-	-	-
11. Nong Mhoo (Plot 2) Khang	X	X	X
12. Dong Mhoo (Plot 3) Na Hin Kong	X	X	X

Source : Basic Village Level Data, Mukdaharn, 1994.

Table 3 Wet Season Occupational Pattern in the Study Area (Cont'd)

MAHASARAKHAM Study Area / Village	Wet Season Occupational Pattern		
	Rice Farming	Cassava	Livestock Production
1. Khok Khaw Som Kob	X	X	X
2. Din Daeng - Wang Kung Hin Hac	X	X	X
Hua Na Kam	X	-	X
3. Kok Hin Lad Nong Koon	X	X	X
4. Kok Kham Pom Hin Lad	X	X	X
5. Kok Phak Good - Pong Daeng Non Thong	X	-	X
6. Nong Koo - Na Doon Lao Jan	X	X	X
Kok Lam	X	-	X
7. Dong Keng - Nong Ya Plong Dong Keng	X	X	X
8. Kud Rang Non Som Boon	-	-	-
Wang Pla Do	X	X	X
Sokpara	X	X	X
Nong Saeng	-	-	-
9. Kok Sam Rong - Boh Pan Lao E Man	X	-	X
10. Kok Rai Nong Ma Mouth	X	X	X

Source : Basic Village Level Data, Mahasarakham, 1994.

Table 3 Wet Season Occupational Pattern in the Study Area (Cont'd)

KHON KAEN Study Area / Village	Wet Season Occupational Pattern		
	Rice Farming	Cassava	Livestock Production
1. Poo Ra Ngam Nong Tao	X	X	X
2. Sawathi Lad Na Piang	X	X	X
3. Khok Luang (Plot 3) Don Kaen Tao	X	-	-
4. Khok Talat Yai Kham Huo Chang	-	-	-
5. Dong Sam Lao Yai	X	X	X
6. Non Nam Bueng Nong Nam Khoon Nuo	X	X	X
Sua Tao	X	X	-
Sok Nak	X	-	X
Mab Ta Kra	X	-	X

Source : Basic Village Level Data, Khon Kaen, 1994.

Table 4 Wet Season Average Rice Yield Per Rai and Income Per Household in the Study Area

SAKON NAKHON Study Area / Village	Average Rice Yield (Kg / rai)	Income / HH (baht)
1. Dong Mho Thong Dong Mho Thong	360	21,500
2. Dong Pha Lad Nong Phai	-	-
3. Kud Hai, Na Ni, Non Udom		
Nong Phuo	333	28,000
Phak Kham Poo	300	25,000
Na Tan	360	23,000
Na Lao	300	15,000
4. Kok Poo, Na Muang Phon Ngam	-	8,333
5. Poo Wong Thung Chouk	300	18,000
Total	325	19,833

Source : Basic Village Level Data, Sakon Nakhon, 1994.

- = No data available.

Table 4 Wet Season Average Rice Yield Per Rai and Income Per Household in the Study Area (Cont'd)

MUKDAHARN Study Area / Village	Average Rice Yield (Kg / rai)	Income / HH (baht)
1. Dong Bang E (Plot 1) Ihao Pa Ped Na Thon Yai	300 -	10,000 -
2. Dong Bang E (Plot 2) Pa Pha Yom	200	10,000
3. Dong Bang E (Plot 3) Khon Kaen	300	10,600
4. Dong Bang E (Plot 4) Nong Lek	-	-
5. Dong Bang E (Plot 5) Loop Ping	300	5,000
6. Dong Bang E (Plot 7) Khok Klang	290	18,000
7. Dong Poo Si Than Wang Nong	300	16,000
8. Dong Poo Pan Pon Daeng Pang Daeng Pon Sawang Sok	360 330 250 300	5,000 3,500 4,500 3,000
9. Dong Mhoo Na Sua Lai Pha Wai	208 260	15,000 8,000
10. Dong Mhoo (Plot 1) Chanode Noi	-	-
11. Dong Mhoo (Plot 2) Khang	200	16,500
12. Dong Mhoo (Plot 3) Na Hin Kong	200	5,000
Total	271	9,293

Source : Basic Village Level Data, Mukdaharn, 1994.

- = No data available.

Table 4 Wet Season Average Rice Yield Per Rai and Income Per Household in the Study Area (Cont'd)

MAHASARAKHAM Study Area / Village	Average Rice Yield (Kg / rai)	Income / HH (baht)
1. Khok Khaw Som Kob	251	6,000
2. Din Daeng - Wang Kung Hin Hae	280	10,000
Hua Na Kam	240	27,000
3. Kok Hin Lad Nong Koon	350	20,000
4. Kok Kham Pom Hin Lad	300	20,000
5. Kok Phak Good - Pong Daeng Non Thong	280	7,650
6. Nong Koo - Na Doon Lao Jan	330	45,650
Kok Lam	220	18,000
7. Dong Keng - Nong Ya Plong Dong Keng	250	8,500
8. Kud Rang Non Som Boon	-	-
Wang Pla Do	300	16,000
Sokpara	250	17,500
Nong Saeng	-	-
9. Kok Sam Rong - Boh Pan Lao E Man	290	74,000
10. Kok Rai Nong Ma Mouth	260	25,500
Total	277	22,754

Source : Basic Village Level Data, Mahasarakham, 1994.

- = No data available.

Table 4 Wet Season Average Rice Yield Per Rai and Income Per Household in the Study Area (Cont'd)

KHON KAEN Study Area / Village	Average Rice Yield (Kg / rai)	Income / HH (baht)
1. Poo Ra Ngam Nong Tao	200	26,500
2. Sawathi Lad Na Piang	260	21,500
3. Khok Luang (Plot 3) Don Kaen Tao	-	-
4. Khok Talat Yai Kham Hua Chang	-	-
5. Dong Sam Lao Yai	300	20,000
6. Non Nam Bueng Nong Nam Khoon Nuo	100	11,500
Sua Tao	180	8,000
Sok Nak	-	-
Mab Ta Kra	30	10,500
Total	178	16,333

Source : Basic Village Level Data, Khon Kaen, 1994.

- = No data available.

Additional field data on the economic status of the study area is presented in Table 5. In the wet season, the average total income of the respondents was 29,860 baht; the majority of them (48 per cent) earned 20,000 baht and over, 36 per cent earned between 5,000 - 20,000 baht, and 16 per cent earned less than 5,000 baht.

Nearly half of the respondents (42 per cent) have no income in the dry season; 31 per cent earned less than 10,000 baht and 27 per cent earned 10,000 baht or more. The average total income in the dry season was 12,465 baht.

Normally, offspring in the Northeast who work outside the village send some money to their parents. About 62 per cent of the respondents received less than 2,500 baht a year from their sons or daughters. Twenty seven per cent received 10,000 baht or more, and 11 per cent received 2,500 or more (but less than 10,000 baht). On average, remittance was 5,235 baht.

The average size of land ownership in the study area is 22 rai. About 51 per cent have between 6 to 20 rai, 41 per cent have more than 20 rai, and 7 per cent have between 1-5 rai. However, a few people have no land and work as farm laborers.

Table 5 Respondents' Economic Status

	Sakon Nakhon	Mukdaharn	Mahasarakham	Khon Kaen	Total
Total income in wet - season (baht)					
Less than 5,000	22.1 (17)	9.2 (10)	3.3 (3)	29.7 (27)	15.5 (957)
5,000 - 20,000	44.2 (34)	45.9 (50)	18.7 (17)	36.3 (33)	36.3 (33)
20,000 +	33.8 (26)	45.0 (49)	78.0 (71)	34.1 (31)	48.1 (177)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Mean = 29,860 baht					
Total income in dry - season (baht)					
No income	57.1 (44)	45.9 (50)	58.2 (53)	6.6 (6)	41.6 (153)
Less than 10,000	28.6 (22)	31.2 (34)	12.1 (11)	50.5 (46)	30.7 (113)
10,000 +	14.3 (11)	22.9 (25)	29.7 (27)	42.9 (39)	27.7 (102)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Mean = 12,465 baht					
Average annual remittance obtained from sons/daughters who work elsewhere					
Less than 2,500	59.7 (46)	70.6 (77)	45.1 (41)	70.3 (64)	62.0 (228)
2,500 - 5,000	10.4 (8)	-	5.5 (5)	5.5 (5)	4.9 (18)
5,001 - 9,999	6.5 (5)	11.0 (12)	4.4 (4)	3.3 (3)	6.5 (24)
10,000 - 20,000	16.9 (13)	12.8 (14)	18.7 (17)	4.4 (4)	13.0 (48)
20,000 +	6.5 (5)	5.5 (6)	26.4 (24)	16.5 (15)	13.6 (50)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Mean = 5,235 baht					
Size of land ownership					
No land	-	1.8 (2)	-	1.1 (1)	0.8 (3)
1-5	3.9 (3)	15.6 (17)	3.3 (3)	4.4 (4)	7.3 (27)
6-20	54.4 (42)	52.3 (57)	49.5 (45)	49.5 (45)	51.4 (189)
21-30	22.1 (17)	14.7 (16)	24.2 (22)	17.6 (16)	19.3 (71)
31-50	13.0 (10)	12.8 (14)	18.7 (17)	20.9 (19)	16.3 (60)
50 +	6.5 (5)	2.8 (3)	4.4 (4)	6.6 (6)	4.9 (18)
Mean = 22 rai					

Source : Study Team Survey, January 1997.

The respondents related their problems in Table 6 and Table 7. The most important problem both in the wet and dry seasons is water shortage. Inputs are not available on the local market; the land has become less fertile, transportation costs have risen and there is no market outlet for farm produce. Respondents with debts or experiencing poverty seem to be the first and hardest hit by the declining economic situation. However, it is surprised that many respondents have no fear and trepidation about debts. They feel no different from the others in the village when a farmer cannot pay back a loan --- the money lender still allows him to pay interest, often at higher rates. The farmer works as hard as he can and hopes that one day he will be able to pay off the loan. The villagers do not need much to live a decent life. As long as they have rice in store, and other necessities for the year, they are satisfied.

Table 6 Problems Faced in the Wet Season

Problems	Sakon Nakhon			Mukdaharn			Mahasarakham			Khon Kaen			Total		
	0	1	2	0	1	2	0	1	2	1	1	2	0	1	2
Water	16.9	83.1	-	7.3	92.7	-	3.3	94.5	2.2	30.8	69.2	-	14.1	85.3	0.5
0 = no problem 1 = water shortage 2 = inadequate water source															
Inputs	44.2	55.8	-	11.0	89.0	-	70.3	28.6	1.1	39.6	60.4	-	39.7	60.1	0.3
0 = no problem 1 = not available on local market 2 = expensive															
Transportation	49.4	1.3	49.4	23.9	0.9	75.2	29.7	1.1	69.2	48.4	-	51.6	36.7	0.8	62.5
0 = no problem 1 = far from market 2 = high cost of transportation															
Market	16.9	81.8	1.3	22.0	78.0	-	35.2	64.8	-	19.8	80.2	-	23.6	76.1	0.3
0 = no problem 1 = no market outlet 2 = low price															
Debt	22.1	77.9	-	28.4	71.5	-	47.3	52.7	-	20.9	79.1	-	29.9	70.1	-
0 = no problem 1 = debt problem															
Soil Fertility	28.6	1.3	70.1	25.7	0.9	73.4	52.7	-	47.3	40.7	-	59.3	36.7	0.5	62.8
0 = no problem 1 = acidity 2 = salinity															

Table 7 Problems Faced in the Dry Season

Problems	Sakon Nakhon			Mukdaharn			Mahasarakham			Khon Kaen			Total		
	0	1	2	0	1	2	0	1	2	1	1	2	0	1	2
Water	22.1	76.6	1.3	8.3	90.8	0.9	14.3	85.7	-	6.6	93.4	-	12.2	87.2	0.5
0 = no problem 1 = water shortage 2 = inadequate water source															
Inputs	24.7	5.2	70.1	16.5	28.4	55.0	14.3	8.8	76.9	6.6	2.2	91.2	15.2	12.2	72.6
0 = no problem 1 = not available on local market 2 = expensive															
Transportation	26.0	2.6	71.4	17.4	7.3	75.2	41.8	1.1	57.1	11.0	1.1	87.9	23.6	3.3	73.1
0 = no problem 1 = far from market 2 = high cost of transportation															
Market	28.6	68.8	2.6	13.8	85.3	0.9	46.2	52.7	1.1	34.1	65.9	-	29.9	69.0	1.1
0 = no problem 1 = no market outlet 2 = low price															
Debt	42.9	57.1	-	36.7	63.3	-	94.5	5.5	-	52.7	47.3	-	56.3	43.7	-
0 = no problem 1 = debt problem															
Soil Fertility	39.5	-	60.5	43.1	5.5	51.4	47.3	-	52.7	42.9	-	57.1	43.3	1.6	55.0
0 = no problem 1 = acidity 2 = salinity															

Farmers' Migration

During the slack season, millions of Northeastern villagers of working age leave their families to seek jobs in the Central Plains, the province under the Eastern Seaboard Development Project, and the South. A number of them go to work in Bangkok and some go overseas. Some of them do not return to help in farm work in the wet season and send money back to their parents. Most migrants leave home with friends or relatives.²

The provinces in the Northeast are normally hardest hit by drought. Numerous projects have been launched especially in poverty-stricken areas to discourage labor migration. These include job creation programs in the dry season and long-term projects such as vocational training in gem-cutting, silk-weaving, carpentry and livestock production.

The major reason for this exodus of unskilled villagers into the urban centers is to earn extra income. It is also important to note that many Northeasterners consider their trip to Bangkok and other cities as sight-seeing and an opportunity to widen their horizons. They experience more of a social life as well as the experience of finding a job or seeking a fortune outside their villages.³

It is no surprise that most household heads in the Northeast want their family members to migrate—the reason being that there is not enough work for all of them from where they come in rural communities. In addition, those who leave home can gain more experience and acquire more skills to increase their income. It is also obvious that some families who have children working in Bangkok or other cities possess modern luxury items bought with the money from their children. The gap between the families who have children working outside the village and those who have not is another reason for the household heads to support their children's migration.⁴

Approximately one-third of the total labor force in Thailand is engaged in non-farm work. Northeasterners leave home to work mainly in construction. There are two groups of labor migrants. One group consists of farmers who temporarily migrate to look for work after the harvesting season. Both men and women, single and married, earn extra income in the dry season and return to the villages during the cropping season. Another group consists of landless laborers and those who have permanent jobs. They occasionally go back to the villages to visit their parents and/or relatives to perform religious ceremonies and to attend annual festivals.

Detailed information on household members working outside villages in the dry season is presented in Table 6.

Table 6 HH Members' Work other than in Villages in the Dry Season

	Sakon Nakhon	Mukdaharn	Maharakham	Khon Kaen	Total
Where to ?					
HH Head					
Within the province	7.8 (6)	5.5 (6)	22.0 (20)	-	8.7 (32)
Other provinces	11.7 (9)	2.8 (30)	2.2 (2)	-	3.8 (14)
Bangkok	2.6 (2)	-	2.2 (2)	1.1 (1)	1.4 (5)
NA / NAP	77.9 (60)	91.7 (100)	73.6 (67)	98.9 (90)	86.1 (317)
Wife					
Within the province	2.6 (2)	-	2.2 (2)	-	1.1 (4)
Other provinces	5.2 (4)	0.9 (1)	1.1 (1)	-	1.6 (6)
Bangkok	1.3 (1)	-	-	-	0.3 (1)
NA/ NAP	90.9 (70)	99.1 (108)	96.7 (88)	100.0 (91)	97.0 (357)
Son (s)					
Within the province	1.3 (1)	5.5 (6)	11.0 (10)	3.3 (3)	5.4 (20)
Other provinces	20.8 (16)	8.3 (9)	4.4 (4)	5.5 (5)	9.2 (34)
Bangkok	22.1 (17)	21.1 (23)	35.2 (32)	14.3 (13)	23.1 (85)
NA / NAP	55.8 (43)	65.1 (71)	49.5 (45)	76.9 (70)	62.2 (229)
Daughter (s)					
Within the province	2.6 (2)	2.8 (3)	5.5 (5)	4.4 (4)	3.8 (14)
Other provinces	18.2 (14)	5.5 (6)	4.4 (4)	4.4 (4)	7.6 (28)
Bangkok	20.8 (16)	27.5 (30)	37.4 (34)	15.4 (14)	25.5 (94)
NA / NAP	58.4 (45)	64.2 (70)	52.7 (48)	75.8 (69)	63.0 (232)

Source : Study Team Survey, January 1997.

Table 6 III Members' Work other than in Villages in the Dry Season (Cont'd)

	Sakon Nakhon	Mukdaharn	Mahasarakham	Khon Kaen	Total
Duration					
III Head					
Commuting	3.9 (3)	5.5 (6)	13.2 (12)	-	5.7 (21)
Less than 3 months	7.8 (6)	2.2 (2)	6.6 (6)	-	3.8 (14)
More than 3 months	10.4 (8)	0.9 (1)	6.6 (6)	1.1 (1)	4.6 (16)
NA / NAP	77.9 (60)	92.7 (101)	73.6 (67)	98.9 (90)	86.1 (317)
Wife					
Commuting	1.3 (1)	-	1.1 (1)	-	0.5 (2)
Less than 3 months	2.6 (2)	-	2.2 (2)	-	1.1 (4)
More than 3 months	5.2 (4)	0.9 (1)	1.1 (1)	-	1.6 (6)
NA / NAP	90.9 (70)	99.1 (108)	96.7 (88)	100.0 (91)	97.0 (357)
Son (s)					
Commuting	2.6 (2)	3.7 (4)	5.5 (5)	2.2 (2)	3.5 (13)
Less than 3 months	9.1 (7)	5.5 (6)	5.5 (5)	1.1 (1)	5.2 (19)
More than 3 months	32.5 (25)	26.6 (29)	39.6 (36)	19.8 (18)	29.1 (107)
NA / NAP	55.8 (43)	65.1 (71)	49.5 (45)	76.9 (70)	62.2 (229)
Daughter (s)					
Commuting	-	2.8 (3)	3.3 (3)	1.1 (1)	1.9 (7)
Less than 3 months	3.9 (3)	2.8 (3)	3.3 (3)	2.2 (2)	2.7 (10)
More than 3 months	37.7 (29)	29.4 (32)	42.9 (39)	20.9 (19)	32.3 (119)
NA / NAP	58.4 (45)	65.1 (71)	51.6 (47)	75.8 (69)	63.0 (232)

Table 6 III Members' Work other than in Villages in the Dry Season (Cont'd)

	Sakon Nakhon	Mukdaharn	Mahasarakham	Khon Kaen	Total
Kind of Job					
<u>HH Head</u>					
Industry	3.9 (3)	0.9 (1)	5.5 (5)	-	2.4 (9)
Agriculture	7.8 (6)	5.5 (6)	3.3 (3)	-	4.1 (15)
Service	1.3 (1)	0.9 (1)	7.7 (7)	-	2.4 (9)
Skilled labor	9.1 (7)	0.9 (1)	9.9 (9)	1.1 (1)	4.9 (18)
NA / NAP	77.9 (60)	91.7 (100)	73.6 (67)	98.9 (90)	86.1 (317)
<u>Wife</u>					
Industry	3.9 (3)	-	-	-	0.8 (3)
Agriculture	-	0.9 (1)	1.1 (1)	-	0.5 (2)
Service	-	-	2.2 (2)	-	0.5 (2)
Skilled labor	5.2 (4)	-	1.1 (1)	-	1.4 (5)
NA / NAP	90.9 (70)	99.1 (108)	95.6 (87)	100.0 (91)	96.7 (356)
<u>Son (s)</u>					
Industry	10.4 (8)	18.3 (20)	15.4 (14)	-	11.4 (42)
Agriculture	2.6 (2)	5.5 (6)	-	-	2.2 (8)
Service	6.5 (5)	4.6 (5)	24.2 (22)	-	8.7 (32)
Skilled labor	7.8 (6)	4.6 (5)	8.8 (8)	-	5.2 (19)
NA / NAP	72.7 (56)	67.0 (73)	51.6 (47)	100.0 (91)	72.6 (267)
<u>Daughter (s)</u>					
Industry	11.7 (9)	13.8 (15)	24.2 (22)	4.4 (4)	16.8 (62)
Agriculture	1.3 (1)	5.5 (6)	1.1 (1)	1.1 (1)	2.4 (9)
Service	5.2 (4)	10.1 (11)	15.4 (14)	15.4 (14)	11.7 (43)
Skilled labor	7.8 (6)	6.4 (7)	7.7 (7)	3.3 (3)	6.3 (23)
NA / NAP	58.4 (45)	64.2 (70)	52.7 (48)	75.8 (69)	63.0 (232)

Table 6 HH Members' Work other than in Villages in the Dry Season (Cont'd)

	Sakon Nakhon	Mukdaharn	Maharakham	Khon Kaen	Total
Reason for working elsewhere in the dry season					
Not Applicable	40.3 (31)	2.8 (3)	34.1 (31)	61.5 (56)	32.9 (121)
Need cash	54.5 (42)	56.9 (62)	33.0 (30)	35.2 (32)	45.1 (166)
Cannot practice - cropping.	5.2 (4)	1.8 (2)	33.0 (30)	1.1 (1)	10.1 (37)
Others	-	38.5 (42)	-	2.2 (2)	12.0 (44)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)

Table 6 III Members' Work other than in Villages in the Dry Season (Cont'd)

	Sakon Nakhon	Mukdaharn	Maharakham	Khon Kaen	Total
Average income per month (baht)					
<u>III Head</u>					
Less than 3,000	3.9 (3)	3.7 (4)	13.2 (12)	1.1 (1)	5.4 (20)
3,000 +	18.2 (14)	4.6 (5)	12.1 (11)	-	8.2 (30)
NA / NAP	77.9 (60)	91.7 (100)	74.7 (68)	98.9 (90)	86.4 (318)
<u>Wife</u>					
Less than 3,000	3.9 (3)	-	1.1 (1)	-	1.1 (4)
3,000 +	5.2 (4)	0.9 (1)	2.2 (2)	-	1.9 (7)
NA / NAP	90.9 (70)	99.1 (108)	96.7 (88)	100.0 (91)	97.0 (357)
<u>Son (s)</u>					
Less than 3,000	5.2 (4)	11.9 (13)	-	-	-
3,000 +	6.5 (5)	12.8 (14)	-	-	-
NA / NAP	88.3 (68)	75.2 (82)	70.3 ()	100.0 (91)	-
<u>Daughter (s)</u>					
Less than 3,000	10.4 (8)	13.8 (15)	19.8 (18)	-	11.1 (41)
3,000 +	14.3 (11)	21.1 (23)	25.3 (23)	-	15.5 (57)
NA / NAP	75.3 (58)	65.1 (71)	54.9 (50)	100.0 (91)	73.4 (270)

Table 6 HH Members' Work other than in Villages in the Dry Season (Cont'd)

	Sakon Nakhon	Mukdaharn	Maharakham	Khon Kaen	Total
Are you interested in changing cropping pattern from monoculture to integrated farming ?					
No	13.0 (10)	21.1 (23)	-	8.8 (8)	11.2 (41)
Yes	87.0 (67)	78.9 (86)	100.0 (91)	91.2 (83)	88.8 (327)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Have you or other HH members ever practiced upland cropping elsewhere (Where you do not own or rent the land) ?					
No	98.7 (76)	89.0 (97)	100.0 (91)	100.0 (91)	96.5 (355)
Yes	1.3 (1)	11.0 (12)	-	-	3.5 (13)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Size of land rented (rai)					
No land rented	97.4 (75)	90.8 (99)	97.8 (89)	96.7 (88)	95.4 (351)
1-10	1.3 (1)	7.3 (8)	-	1.1 (1)	2.7 (10)
11-50	1.3 (1)	1.8 (2)	1.1 (1)	2.2 (2)	1.6 (6)
50 +	-	-	1.1 (1)	-	0.3 (1)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
How frequently do you or other HH members go to the forest to collect fuel wood or search for food ?					
Never	9.1 (7)	17.4 (19)	22.0 (20)	24.2 (22)	18.5 (68)
Every day	63.6 (49)	27.5 (30)	13.2 (12)	25.3 (23)	31.0 (114)
Every week	15.6 (12)	33.9 (37)	26.4 (24)	22.0 (20)	25.3 (93)
Every month	10.4 (8)	16.5 (18)	33.0 (30)	20.9 (19)	20.4 (75)
Every 3 months	1.3 (1)	4.6 (5)	5.5 (5)	7.7 (7)	4.9 (18)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)

Farmers' Debts

The Thai farmers' debt problem has grown increasingly in a vicious circle. In 1996, it was reported that 84 per cent of farmers nationwide owed a total of 195,340 million baht to the Bank of Agriculture and Agricultural Cooperatives (BAAC).⁵ Most of the farmers also borrowed from local money lenders who are either relatives or neighbors or merchants. Although the BAAC was set up with the aim of minimizing farmers' debt burdens by lending at low interest rates, it has often been criticized for pulling farmers further into the debt trap.

A major cause of debt is the combination of insufficient income and too many expenses. The government's promotion of cash crops has replaced the subsistence crop economy. Approximately 46 per cent of the money farmers earn is spent on investment.⁶ Agricultural extension officials have recommended that the farmers utilize modern technology and farming tools in order to be export oriented and earn extra income. More investment is then needed to buy fertilizer, pesticides, high quality seed, farming tools, and perhaps extra land. Farmers are then compelled to borrow money from the BAAC because the cost of planting and harvesting has risen. After the sale of rice, a farmer earns a balance of roughly 1,000 to 2,000 baht.⁷ Farmers generally are then unable to repay the loan in full to the BAAC. They turn to local money lenders so that they can pay off their loan to meet the BAAC deadline. Meanwhile, they apply for a new BAAC loan to continue the vicious circle.

The respondents' debt situation is presented in Table 7. A major source of loans in the study area is the BAAC. The number of respondents who borrowed 10,000-20,000 baht (33 per cent) is almost equal to those who borrowed more than 20,000 baht (35 per cent) and 9 per cent borrowed less than 10,000 baht. About 23 per cent did not borrow from the BAAC because they owned no land and misconceptions about the BAAC.

When asked whether they were able to repay the debt as scheduled, 65 per cent said "yes" and 12 per cent said "no". Those who could not said that they had taken out further loans.

The BAAC was originally set up in 1966. Its aim was to reduce farmers' debt burdens by lending at a low interest rate and putting local money lenders out of business.⁸ The field data collected reveal that the respondents who borrow from the BAAC also borrow from money lenders who are either neighbors, relatives or merchants. Normally, a farmer can borrow from the BAAC once a year. Although one of the BAAC's restrictions is that anyone who borrows from the bank cannot borrow from any other source, this may rarely be the case. The basic principal of a BAAC loan is to improve the productive capacity of a farmland. However, some respondents spent BAAC money on living expenses and debts to money lenders. After the annual crop harvest, they try to pay off their debts and interest to the BAAC from which they can borrow any amount of money. Some farmers who are not able to pay off the debt really worry about their problem so they turn to local money lenders to repay BAAC. Then they apply for a new BAAC loan to pay off debts and interest to the local money lender and to pay for food and necessities. Sometimes they borrow farm inputs (fertilizer and pesticides) from

merchants during the cropping season. This is how the debt cycle continues. The combination of low prices for produce, high cost of fertilizer and pesticide, unpredictable weather and infertile soil contribute to the plight of these farmers. In addition, some farmers like drinking, gambling and have become more materialistic. Health problems, religious ceremonies and social activities such as weddings can add to their debts.

Table 7 Respondents' Debt Situation

	Sakon Nakorn	Mukdaharn	Maharakham	Khon Kaen	Total
Do you have any debts? How much? (baht) - BAAC					
No loan	35.1 (27)	29.4 (32)	15.4 (14)	11.0 (10)	22.6 (83)
Below 10,000	11.7 (9)	17.4 (19)	2.2 (2)	4.4 (4)	9.2 (34)
10,000-20,000	37.7 (29)	33.0 (36)	41.8 (38)	19.8 (18)	32.9 (121)
20,001 +	15.6 (12)	20.2 (22)	40.7 (37)	64.9 (59)	35.4 (130)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Are you able to repay your debts as scheduled?					
No	10.4 (8)	13.7 (15)	16.5 (15)	8.8 (8)	12.5 (46)
Yes	54.5 (42)	56.9 (62)	68.1 (62)	80.2 (73)	64.9 (239)
No loan	35.1 (27)	29.4 (32)	15.4 (14)	11.0 (10)	22.6 (83)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)

Source : Study Team Survey, January 1997.

Level of Development and Quality of Life Problems

The Northeast of Thailand is the largest and most populated area. The region's water shortage and poor soils contribute to its low agricultural production. Consequently, its per capita income is the country's lowest. The government has allocated a large budget to help solve the basic problems of the region since the First Phase of the National Economic and Social Development Plan. As a result, the number of villages below the development line decreased by about half from 1992 to 1994. Table 8 shows a comparison between the level of development in the Northeast during 1992-1994. The number of villages within the development level and beyond development level increased from 47 per cent to 57 per cent, and from 7 per cent to 20 per cent respectively.

Table 8 Comparison of Level of Village Development in the Northeast 1992 - 1994.

Level of Development	Number of Villages	
Below development line	11,575 (45.38%)	6,002 (22.94%)
Within development line	12,314 (47.53%)	14,838 (56.70%)
Beyond development line	1,835 (7.08%)	5,325 (20.35%)
Total	25,906	26,161

Source : NESDB, Rural Thailand Situation 1994.

The level of development of Sakon Nakhon, Mukdaharn, Mahasarakham and Khon Kaen is shown in Table 9. For every group of indicators, the level of development on average is 2, that is, within development line. It is obvious that farm produce, either rice or upland crop, is below the development line.

The following problems that affect the people's quality of life are found in the four provinces.

1. Poverty : Their annual income is less than 15,000 baht.
2. Inadequate clean drinking water :
the minimum requirement is 2 litres per person a day.
3. Children of 5 years old or less suffer from malnutrition.
4. No vocational training for children who have finished school.
5. Household members feel unsafe.
6. More than two children in a family.
7. Poor household sanitation.

The poverty and debt problem is not only affecting their quality of life but also has a long-term affect on the development of the area. Unless the farmers in the study areas change their pattern of cropping from monoculture to integrated farming, they will never escape the vicious debt circle.

Table 9 Rank Order of Average Points of Indicators of Development by Sector, 1994

Indicators of Development	Level of Development			
	Sakon Nakhon	Mukdaharn	Maharakham	Khon Kaen
Basic Situation				
1. Land Documents	1.86	1.83	2.01	1.91
2. Electricity	2.97	2.96	2.98	2.97
3. Communications	2.54	2.52	2.39	2.63
4. Village Business	2.32	2.45	2.05	2.24
5. Source of Fuel and Wood-use	2.39	1.94	2.83	2.37
6. Animal Labor	2.32	2.63	2.45	2.39
7. Land Rights	2.51	2.76	2.57	2.43
Average	2.42	2.44	2.47	2.42
Productive Income Employment				
8. Occupation and Employment	2.46	2.74	2.33	2.62
9. Wage	2.96	3.00	2.95	2.96
10. Rice Yield	1.88	1.77	1.57	1.58
11. Upland Crop Yield	1.28	1.48	1.18	1.62
12. Other Occupations	1.49	1.46	1.89	1.58
13. Job-seeking Migration	1.73	1.78	1.77	1.74
14. Farmers' Organizations	2.44	2.51	2.44	2.55
15. Applying Credit for Production	2.69	2.71	2.66	2.74
16. Dry Season Cropping	1.25	1.26	1.29	1.28
Average	2.02	2.08	2.01	2.07
Public Health and Care				
17. Public Health Service	1.97	2.58	2.05	1.79
18. Medical Care	1.53	1.97	1.63	1.23
19. House Sanitation	1.70	1.86	2.02	1.79
20. Health and Care	2.29	2.04	2.12	2.27
21. Weight of First Born Baby	2.83	2.60	2.74	2.67
22. Malnourished Children, 5 years or less	2.55	2.53	2.58	2.55
23. Family Planning	2.65	2.55	2.68	2.71
Average	2.22	2.30	2.26	2.14
Water Sources				
24. Clean Water	1.98	1.70	2.28	2.01
25. Source of Drinking Water	2.63	2.56	2.78	2.74
26. Water for Domestic Use	2.66	2.52	2.39	2.64
27. Irrigation Water	2.11	1.99	1.88	1.91
Average	2.35	2.19	2.33	2.33
Knowledge, Education and Culture*				
28. Educational Level	-	-	-	-
29. Literacy Rate	-	-	-	-
30. G's Information Dissemination	-	-	-	-
31. Information on Quality of Life	-	-	-	-

Table 9 (Cont'd)

Indicators of Development	Level of Development			
	Sakon Nakhon	Mukdaharn	Maharakham	Khon Kaen
32. Place of Information Dissemination	-	-	-	-
33. Place for Information Service	-	-	-	-
34. Religious, Cultural, Sporting Activities	-	-	-	-
Average	-	-	-	-
<u>Natural Resources and Environment</u>				
35. Forest	1.89	1.86	2.19	2.06
36. Soil	2.00	1.99	2.06	1.81
37. Water	2.51	2.72	2.65	2.54
Average	2.13	2.19	2.30	2.14

Source : NESDB, Rural Thailand Situation, 1994

- * No data available
- 1 = Below development line
- 2 = Within development line
- 3 = Beyond development line

Farmers' Opinions on Changing Cropping Patterns

One farmer in the Northeast said "Like other farmers, I was farming with a loan from the BAAC. Every year, rice prices dropped and I had to borrow more and more. I was trapped in a vicious circle." After many years of debt, he started to think seriously about the future. Many farmers have sold their land and become low paid laborers in the city. This farmer decided to abandon commercial rice farming. After long discussion with his wife to get her approval, he sold much of his land to pay off his debts. Instead of growing rice to sell for profit, he started to grow plants for family consumption on a small plot of land. The plants ranged from vegetables to fruit trees, from medicinal herbs to rice. He also dug fish ponds and raised chickens. His farm's output soon enabled the family to become almost self-sufficient. He told his wife, "we are not going to be rich, but we will never starve or go into debt again." After a few years of hard work, he found that the diversity of plants replenished his soil's fertility. He had farm products more than his family could use, so he sold some products at the market in town. His family income has risen beyond his expectations.¹⁰

The team survey data presented in Table 10 indicate that the majority of respondents (89 per cent) are interested in changing cropping patterns from monoculture to integrated farming. However, some of them in Mukdaharn, Sakon Nakorn and Khon Kaen are still skeptical about integrated farming. The reasons given included water shortage, lack of labor, having limited land and no land ownership.

Table 10 Farmers' Opinions on Changing Cropping Patterns

Opinion	Sakon Nakorn	Mukdaharn	Maha-sarakham	Khon Kaen	Total
Are you interested in changing cropping patterns from monoculture to integrated farming?					
Yes	87 (67)	78.9 (86)	100.0 (91)	91.2 (83)	88.8 (327)
No	13 (10)	21.1 (23)	-	8.8 (8)	11.2 (41)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)

Farmers' Expectations about Development Projects

In the past, development projects had been implemented using a "top down approach". All objectives and activities were specifically planned and programmed at the outset. This approach limited abilities to respond effectively to changing conditions in the project areas and to the needs of the people. To overcome the limitations of the top down approach, a "learning process approach" seems to be a promising option. The learning process approach has facilitated full participation of the farmers. In agricultural development project, the information collected from the project areas and feedback from the participants has helped to identify the objectives and activities, strengths and weaknesses of the project implementation.

The respondents were asked whether or not they had heard about ALRO development projects. More than half (59 per cent) said "no" and 41 per cent said "yes". Their expectations about development projects are presented in Table 11. With regard to increased rice production and income in the project areas, what the respondents expect from the government agencies according to their need priorities are as follows.

- Water source development
- Good price for farm products
- Improved soil fertility
- Application of high yield seeds, and
- Providing credit for production

When asked whether or not they approve if government agencies are going to promote dry season cropping, most of them (97 per cent) disapproved. The respondents were further asked if they approved; then what kind of assistance they expected from the government agencies. The assistance they expected are prioritized respectively as follows.

- Water source development
- Training on cropping method to meet market demand, and
- Improved soil fertility

To increase upland cropping, the assistance they expected from the government agencies are prioritized respectively as follows.

- Solving the water shortage problem
- Improved soil fertility
- Applying high yield varieties
- Marketing of products, and
- Providing loans or credit for production

Table 11 Farmers' Expectations about Development Projects

Items	Sakon Nakorn	Mukdaharn	Maha - sarakham	Khon Kaen	Total
Have you heard about AIRO development projects ?					
No	24.7 (19)	74.3 (81)	39.6 (36)	89.0 (81)	59.0 (217)
Yes	75.3 (58)	25.7 (28)	60.4 (55)	11.0 (10)	41.0 (151)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Assistance/need expected from government agencies to increase rice production in the wet season					
Water Source - Development.					
High	81.8 (63)	82.6 (90)	96.7 (88)	90.1 (82)	87.8 (323)
Medium	6.5 (5)	13.8 (15)	2.2 (2)	5.5 (5)	7.3 (27)
Low	-	3.7 (4)	-	1.1 (1)	1.4 (5)
No answer	11.7 (9)	-	1.1 (1)	3.3 (3)	3.5 (13)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Improved Soil Fertility.					
High	79.2 (61)	78.9 (86)	94.5 (86)	84.6 (77)	84.2 (310)
Medium	7.8 (6)	16.5 (18)	4.4 (4)	9.9 (9)	10.1 (37)
Low	1.3 (1)	2.8 (3)	-	2.2 (2)	1.6 (6)
No answer	11.7 (9)	1.8 (2)	1.1 (1)	3.3 (3)	4.1 (15)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Application of High Yield Seeds.					
High	70.1 (54)	76.1 (83)	94.5 (86)	90.1 (82)	82.9 (305)
Medium	13.0 (10)	20.2 (22)	3.3 (3)	5.5 (5)	10.9 (40)
Low	5.2 (4)	2.8 (3)	1.1 (1)	1.1 (1)	2.4 (9)
No answer	11.7 (9)	0.9 (1)	1.1 (1)	3.3 (3)	3.8 (14)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Providing Credit for Production.					
High	39.0 (30)	64.2 (70)	87.9 (80)	62.6 (57)	64.4 (237)
Medium	26.0 (20)	17.4 (19)	3.3 (3)	23.1 (21)	17.1 (63)
Low	22.1 (17)	10.1 (11)	4.4 (4)	11.0 (10)	11.4 (42)
No answer	13.0 (10)	8.3 (9)	4.4 (4)	3.3 (3)	7.1 (26)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Price of Products.					
High	92.2 (71)	89.9 (98)	86.8 (79)	74.7 (68)	85.9 (316)
Medium	2.6 (2)	8.3 (9)	-	3.3 (3)	3.8 (14)
Low	-	0.9 (1)	-	-	0.3 (1)
No answer	5.2 (4)	0.9 (1)	13.2 (120)	22.0 (20)	10.1 (37)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)

Table 11 Farmers' Expectations about Development Projects (Cont'd)

Items	Sakon Nakorn	Mukdaharn	Maha - sarakham	Khon Kaen	Total
If government agencies are going to promote dry season cropping, do you approve ?					
Approve	2.6 (2)	2.8 (3)	-	-	1.4 (5)
Disapprove	96.1 (74)	96.3 (105)	98.9 (90)	97.8 (89)	97.3 (358)
No answer	1.3 (1)	0.9 (1)	1.1 (1)	2.2 (2)	1.4 (5)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
In the case of approving, what kind of assistance/need do you expect from government agencies?					
Water Source - Development.					
High	92.2 (71)	91.7 (100)	98.9 (90)	98.9 (90)	95.4 (351)
Medium	2.6 (2)	4.6 (5)	-	1.1 (1)	2.2 (8)
Low	1.3 (1)	-	-	-	0.3 (1)
No answer	3.9 (3)	3.7 (4)	1.1 (1)	-	2.2 (8)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Training on - Cropping Method to meet Demand.					
High	85.7 (66)	88.1 (96)	98.9 (90)	97.8 (89)	92.7 (341)
Medium	9.1 (7)	7.3 (8)	-	1.1 (1)	4.3 (16)
Low	1.3 (1)	0.9 (1)	-	1.1 (1)	0.8 (3)
No answer	3.9 (3)	3.7 (4)	1.1 (1)	-	2.2 (8)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Improved Soil Fertility.					
High	89.6 (69)	82.6 (90)	96.7 (88)	85.7 (78)	88.3 (325)
Medium	6.5 (5)	12.8 (14)	1.1 (1)	13.2 (12)	8.7 (32)
Low	-	0.9 (1)	-	1.1 (1)	0.5 (2)
No answer	3.9 (3)	3.7 (4)	2.2 (2)	-	2.4 (9)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Assistance/need expected from government agencies to increase upland cropping					
Solving Problem of Water Shortage.					
High	87.0 (67)	-	81.3 (74)	72.5 (66)	84.5 (311)
Medium	6.5 (5)	-	1.1 (1)	4.4 (4)	4.1 (15)
Low	1.3 (1)	-	2.2 (2)	1.1 (1)	1.1 (4)
No answer	5.2 (4)	-	15.4 (14)	22.0 (20)	10.3 (38)
Total	100.0 (77)	-	100.0 (91)	100.0 (91)	100.0 (368)
Improved Soil Fertility.					
High	88.3 (68)	-	81.3 (74)	64.8 (59)	80.2 (295)
Medium	6.5 (5)	-	4.4 (4)	6.6 (6)	8.2 (30)
Low	-	-	-	6.6 (6)	1.6 (6)
No answer	5.2 (4)	-	14.3 (13)	22.0 (20)	10.1 (37)
Total	100.0 (77)	-	100.0 (91)	100.0 (91)	100.0 (368)

Table 11 Farmers' Expectations about Development Projects (Cont'd)

Items	Sakon Nakorn	Mukdaharn	Maha - sarakham	Khon Kaen	Total
Application of High Yield Varieties.					
High	80.5 (62)	90.8 (99)	79.1 (72)	68.1 (62)	80.2 (295)
Medium	13.0 (10)	9.2 (10)	3.3 (3)	8.8 (8)	8.4 (31)
Low	1.3 (1)	-	3.3 (3)	1.1 (1)	1.4 (5)
No answer	5.2 (4)	-	14.3 (13)	22.0 (20)	10.1 (37)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Providing Loans or Credit for - Production.					
High	40.3 (31)	56.9 (62)	74.7 (68)	56.0 (51)	57.6 (212)
Medium	36.4 (28)	33.0 (36)	4.4 (4)	14.3 (13)	22.0 (81)
Low	18.2 (14)	9.2 (10)	6.6 (6)	7.7 (7)	10.1 (37)
No answer	5.2 (4)	0.9 (1)	14.3 (13)	22.0 (20)	10.3 (38)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Marketing of Products.					
High	83.1 (64)	78.0 (85)	82.4 (75)	70.3 (64)	78.3 (288)
Medium	9.1 (7)	15.6 (17)	3.3 (3)	5.5 (5)	8.7 (32)
Low	1.3 (1)	5.5 (6)	1.1 (1)	2.2 (2)	2.7 (10)
No answer	6.5 (5)	0.9 (1)	13.2 (12)	22.0 (20)	10.3 (38)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)

Farmers' Participation in Development Projects

A participatory strategy for promoting sustainable agricultural and rural development proceeds on the assumption that rural people have a lot to contribute to the process of development planning and natural resource management. They have ideas, wisdom, management skills, technical insight, organizational capacities that are essential for development. They are to be regarded as partners, not as beneficiaries or "target groups".¹¹

The recognition of rural people, both men and women, as equal partners within the development process contributes to a climate of trust between agents of change and rural people and among heterogeneous people, based on mutual trust. Participatory planning is a prerequisite to gaining people's trust.¹²

Failure of past development models has stimulated a search for new options. In production-centered development, the needs of the production system assumed precedence over the needs of the people. It has been realized that focusing on a production system is not an effective approach to achieve productive potential nor to create a productive system responsive to the needs of the majority of the people. Rather it concentrated on industry over agriculture and on urban over rural areas, where the majority of the world population live and obtain their livelihood.

In the 8th National Economic and Social Development Plan, the main focus is on human development. People and the environment are the point of departure for development planning. People are encouraged to organize at all levels to provide a mechanism for participation. Economic development plays a supporting role as a tool of development for people and their quality of life.

The participatory approach is used to improve communication and understanding among partners. It is a learning process to bring information and technology to the farmers and teach them how to use it to improve their productivity and to enable the farmers to specify their own needs. It is important for long-term sustainable development. It helps to integrate the important social and cultural aspects of farmer-led technology development into its own activities and those of its partners. The content of specific activities to achieve the project objectives is based on a continuous flow of information collected from the farmers. Farmer feedback and assessment of the projects' performance are useful in determining the future direction of the project activities.¹³

Table 12 shows the possibility of farmer participation in development projects. Since their first priority expected from the government is solving the water shortage problem, the respondents were asked about the possibility of their participation in the projects. Their possible contributions are ranked as follows.

- Providing information for planning
- Land contribution for construction
- Cash ranges from 200 baht or less to 500 baht or more

However, the majority (94 per cent) said it is not possible for them to contribute labor. The reason may be that their income is low and they have to spend their time earning a living. More than half of them (57 per cent) said they could afford to contribute money of 200 baht or less.

When asked whether or not the respondents are interested in participating in the government's reforestation program and in community forest projects, about 91 and 94 per cent respectively said they were. They were also interested in attending training projects on the following topics, according to their priorities.

- Integrated farming
- Technology transfer on improving soil properties
- Crop growing methods to meet market demand

Other training programs mentioned by the respondents include skilled labor for youngsters.

Table 12 Possibility of Farmers' Participation in the Development Projects

Issues	Sakon Nakorn	Mukdaharn	Maha-sarakham	Khon Kaen	Total
If the government's development project is planned to solve water shortage problems, what is the likelihood of you participating in the project ?					
<u>Labor contribution</u>					
No	96.1 (74)	87.2 (95)	92.3 (84)	100.0 (91)	93.5 (344)
Yes	3.9 (3)	12.8 (14)	7.7 (7)	-	6.5 (24)
<u>Land contribution for construction</u>					
No	18.2 (14)	75.2 (82)	13.2 (12)	2.2 (2)	29.9 (110)
Yes	81.8 (63)	24.8 (27)	86.8 (79)	97.8 (89)	70.1 (258)
<u>Cash contribution (baht)</u>					
200 or less	50.7 (39)	95.4 (104)	27.5 (25)	45.1 (41)	56.8 (209)
201-500	14.3 (11)	0.9 (1)	28.6 (26)	45.1 (41)	21.5 (79)
500 +	35.1 (27)	3.6 (4)	44.0 (40)	9.9 (9)	21.7 (80)
<u>Providing information for planning</u>					
No	9.1 (7)	32.1 (35)	12.1 (11)	-	14.4 (53)
Yes	90.9 (70)	67.9 (74)	87.9 (80)	100.0 (91)	85.6 (315)
If the government's reforestation project is to be implemented close to your community, are you interested in participating in the project?					
No	13.0 (10)	13.8 (15)	2.2 (2)	2.2 (2)	7.9 (29)
Yes	85.7 (66)	86.2 (94)	96.7 (88)	96.7 (88)	91.3 (336)
Not applicable	1.3 (1)	-	1.1 (1)	1.1 (1)	0.8 (3)
If the government is to implement a community forest project, are you interested in participating in the project?					
No	5.2 (4)	13.8 (15)	-	1.1 (1)	5.4 (20)
Yes	93.5 (72)	86.2 (94)	98.9 (90)	98.9 (90)	94.0 (346)
Not applicable	1.3 (1)	-	1.1 (1)	-	0.5 (2)
Are you interested in attending training courses on cropping methods to meet market demand?					
No	2.6 (2)	7.3 (8)	7.7 (7)	1.1 (1)	4.9 (18)
Yes	96.1 (74)	92.7 (101)	90.1 (82)	98.9 (90)	94.3 (347)
Not applicable	1.3 (1)	-	2.2 (2)	-	0.8 (3)
Are you interested in attending a training course on integrated farming ?					
No	1.3 (1)	5.5 (6)	3.3 (3)	2.2 (2)	3.5 (13)
Yes	97.4 (75)	94.5 (103)	94.5 (86)	97.8 (89)	95.7 (352)
Not applicable	1.3 (1)	-	2.2 (2)	-	0.8 (3)
Are you interested in attending a technology transfer courses on improving soil ?					
No	1.3 (1)	4.6 (5)	5.5 (5)	2.2 (2)	3.5 (13)
Yes	97.4 (75)	95.4 (104)	91.2 (83)	97.8 (89)	95.4 (351)
Not applicable	1.3 (1)	-	3.3 (3)	-	1.1 (4)
Are you interested in attending a training courses on handicraft/cottage HH industries ?					
No	33.8 (26)	9.2 (10)	54.9 (50)	29.7 (27)	30.7 (113)
Yes	64.9 (50)	90.8 (99)	42.9 (39)	69.2 (63)	68.2 (251)
Not applicable	1.3 (1)	-	2.2 (2)	1.1 (1)	1.1 (4)

Group or Local Organization

One of the requirements for assisted self-reliant development is local organizations which are channels for participation in decision making, maintaining communication, mobilizing and managing resources and solving conflicts. This creates a sense of belonging among the members and leads to the understanding that they have a stronger say as an organization than as individuals. Appropriate organizations are also to be developed beyond the grassroots level through federations of base-level organization, with both horizontal and vertical linkages.¹⁴

The survey data on group or local organizational membership are revealed in Table 13. About 85 per cent of the respondents belong to groups or local organizations. When asked specifically to which organization they belonged, the majority (64 per cent) stated they belonged to the BAAC with 19 per cent belonging to agricultural cooperatives. Only a few are members of Farming Housewives' Group, Saving Groups for Production, Farmers' Groups, or Cloth Weaving Groups.

Their experience of Water Users' Groups is presented in Table 14. As well as rainwater, 42 per cent of the respondents use water from other sources such as creeks, natural ponds, farm ponds and voluntary weirs. About 18 per cent belong to the Water Users' Groups. However, the number of members varies from one study area to another. They have all established Water Users' Groups with the following rules and regulations.

- Soaking kenaf in a water source is forbidden
- Bathing cattle in a water source is forbidden
- Storing water for one person's use is forbidden
- Water supply is scheduled on a rotational basis
- Water users are involved in maintaining farm ditches
- Fishing is not allowed by individual farmers, it must be a community activity

During water shortage, less than 5 per cent reported water stealing that caused conflict over water use. When asked how farmers try to solve the water shortage problem, the answers were as follows.

- Using pumps
- Digging farm ponds and
- Digging deep tube-wells

Table 13 Group or Local Organization Membership

	Sakon Nakorn	Mukdaharn	Maha-sarakham	Khon Kaen	Total
Do you belong to any group or local organization ?					
No	29.9 (23)	24.8 (27)	3.3 (3)	1.1 (1)	14.7 (54)
Yes	70.1 (54)	75.2 (82)	96.7 (88)	98.9 (90)	85.3 (314)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Do you belong to BAAC ?					
No	51.9 (40)	45.0 (49)	20.9 (19)	27.5 (25)	36.1 (133)
Yes	48.1 (37)	55.0 (60)	79.1 (72)	72.5 (66)	63.9 (235)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Do you belong to an Agricultural Cooperative ?					
No	84.4 (65)	78.9 (86)	84.6 (77)	76.9 (70)	81.0 (298)
Yes	15.6 (12)	21.1 (23)	15.4 (14)	23.1 (21)	19.0 (70)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Do you belong to a Savings Group for Production ?					
No	88.3 (68)	92.7 (101)	97.8 (89)	98.9 (90)	94.6 (348)
Yes	11.7 (9)	7.3 (8)	2.2 (2)	1.1 (1)	5.4 (20)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Do you belong to a Farming Housewives Group ?					
No	77.9 (60)	89 (97)	97.8 (89)	93.4 (85)	89.9 (331)
Yes	22.1 (17)	11 (12)	2.2 (2)	6.6 (6)	10.1 (37)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Do you belong to a Handicraft Group e.g. weaving ?					
No	92.2 (71)	95.4 (104)	100.0 (91)	97.8 (89)	96.5 (355)
Yes	7.8 (6)	4.6 (5)	-	2.2 (2)	3.5 (13)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Do you belong to a Farmers' Group ?					
No	97.4 (75)	88.1 (96)	98.9 (90)	100.0 (91)	95.7 (352)
Yes	2.6 (2)	11.9 (13)	1.1 (1)	-	4.3 (16)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)

Table 14 Experience of Water Users' Groups

	Sakon Nakorn	Mukdaharn	Maha-sarakham	Khon Kaen	Total
Other than rainwater, do you use water from another source for cultivation ?					
No	41.6 (32)	55.0 (60)	46.2 (42)	85.7 (78)	57.7 (212)
Yes	58.4 (45)	45.0 (49)	53.8 (49)	14.3 (13)	42.4 (156)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Are farmers who share water from the same source organized as WUGs ?					
No	32.5 (25)	72.5 (79)	90.1 (82)	87.9 (80)	72.3 (266)
Yes	36.4 (28)	27.5 (30)	3.3 (3)	7.7 (7)	18.5 (68)
No answer	31.2 (24)	-	6.6 (6)	4.4 (4)	9.2 (34)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Water Users' Groups' rules and regulations					
Soaking kenaf in water source is forbidden.					
No	71.4 (55)	90.8 (99)	100 (91)	100 (91)	91.3 (336)
Yes	28.6 (22)	9.2 (10)	-	-	8.7 (32)
Total	100.0 (77)	100.0 (109)	100 (91)	100 (91)	100.0 (368)
Bathing cattle in water source is forbidden.					
No	85.7 (66)	89.0 (97)	100.0 (91)	100.0 (91)	93.8 (345)
Yes	14.3 (11)	11.0 (12)	-	-	6.2 (23)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Storing water for one person's use is forbidden.					
No	80.5 (62)	84.4 (92)	96.7 (88)	100.0 (91)	90.5 (333)
Yes	19.5 (15)	15.6 (17)	3.3 (3)	-	9.5 (35)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Water scheduling.					
No	93.5 (72)	92.7 (101)	96.7 (88)	100.0 (91)	95.7 (352)
Yes	6.5 (5)	7.3 (8)	3.3 (3)	-	4.3 (16)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
Maintaining farm ditches.					
No	76.6 (59)	93.6 (102)	97.8 (89)	93.4 (85)	91.0 (335)
Yes	23.4 (18)	6.4 (7)	2.2 (2)	6.6 (6)	9.0 (33)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)

Table 14 Experience of Water Users' Groups (Cont'd)

	Sakon Nakorn	Mukdaharn	Maha-sarakham	Khon Kaen	Total
Fishing is not allowed for an individual farmer, it should be community activities.					
No	97.4 (75)	50.5 (55)	98.9 (90)	100.0 (91)	84.5 (311)
Yes	2.6 (2)	49.5 (54)	1.1 (1)	-	15.5 (57)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
During water shortage, is there conflict over water use, i.e. water stealing ?					
No	87.0 (67)	91.7 (100)	72.5 (66)	96.7 (88)	87.2 (321)
Yes	7.8 (6)	8.3 (9)	2.2 (2)	-	4.6 (17)
No answer	5.2 (4)	-	25.3 (23)	3.3 (3)	8.2 (30)
Total	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
In solving the problem of water shortage, how did farmers try to be self-help ?					
<u>Use pumps.</u>					
No					
Yes	40.3 (31)	47.7 (52)	69.2 (63)	97.8 (89)	65.2 (240)
Total	59.7 (46)	52.3 (57)	30.8 (28)	2.2 (2)	34.8 (128)
	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
<u>Digging deep tube-wells.</u>					
No					
Yes	80.5 (62)	92.7 (101)	98.9 (90)	100.0 (91)	93.5 (344)
Total	19.5 (15)	7.3 (8)	1.1 (1)	-	6.5 (24)
	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)
<u>Digging farm ponds.</u>					
No					
Yes	61.0 (47)	69.7 (76)	56.0 (51)	97.8 (89)	71.2 (262)
Total	39.0 (30)	30.3 (33)	44.0 (40)	2.2 (2)	28.8 (106)
	100.0 (77)	100.0 (109)	100.0 (91)	100.0 (91)	100.0 (368)

Gender Role in Development

Policies on women in Thailand appeared for the first time in the Third National Economic and Social Development Plan (1971-1975). However, a major concern in this plan was for population control and family planning. After the United Nations Declaration of the year 1975 as the International Women's Year and during the United Nations' Decade for Women (1976-1985), the government promoted women's development activities and delegates were sent to United Nations meetings and the World Conference on Women's Development. In addition, the government established a National Commission on Women's Affairs and a Task Force to assess the status of Thai women and to prepare a Twenty-Year Plan for women's development to be included in national development plans. The Twenty-Year Plan (1982-2001) was completed in 1981. Women in agriculture was identified as one of the women's groups for development. This plan aimed at providing rural women with basic social services, job opportunities, protection in employment and labor-saving devices for domestic work.

The National Commission on Women's Affairs has become a permanent organization under the Prime Minister's Office since March 1989. Its committee members are representatives from government and non-government agencies as well as resource persons from academic institutions. The role of the National Commission on Women's Affairs is coordination, promotion of women's development activities and provision of data on women to be used for research and planning.

In the Fourth National Economic and Social Development Plan (1976-1980), a women's development program was included. The emphasis was on training programs for rural women to improve the status of women and reduce inequalities between men and women. The training activities were carried out by The Community Development Department, aimed at strengthening the role of women as housewives. The training curricular included food preparation, nutrition, cottage industries, family planning, conforming to the Thai and Asian stereotype that decent women should be able to perform their duties of taking care of the family and the home.

In the Fifth National Economic and Social Development Plan (1981-1985), women's development activities were mostly programs for poverty eradication. Special attention was given to income generating activities, vocational and skill training. Women were given opportunities to work both inside and outside the home. To reduce the burdens of women, men were encouraged to join and help with daily chores and child care. The government also provided day-care, health, and other social service centers.

However, men and women were included in all development activities in the Sixth National Economic and Social Development Plan (1986-1990). Although both men and women are responsible for the survival of the households, men are usually assumed to be the major income earners and the household heads.

During the Sixth Plan, attempts had been made to bring successful women farmers, top administrators, planners, policy makers and academics from relevant agencies and institutions to develop women farmers. The national workshop on "Directors for strengthening the Role of Women Farmers" was organized from July 10-11, 1989. This

was followed by a "Regional Workshop on Planning and Implementation Aspects of Programs and Projects Assisting Women Farmers in ASEAN Countries" on August 7-10, 1989. At this workshop, delegates from the participating countries stated their governments' recognition of the role of women in national development.

In Thailand, the commitment from the Ministry of Agriculture and Agricultural Cooperatives (MOAC) to integrate women's development plans and policies into mainstream agriculture and rural development activities was published in 1990. The MOAC Minister announced a policy on women farmers which was later incorporated in the Seventh National Economic and Social Development Plan (1991-1996). Women were for the first time recognized as agricultural practitioners and their skills and technological know-how must be developed to increase yields and improve quality of production. Women must be encouraged so that they can participate in all agricultural activities side by side with men farmers. For the success of policy implementation, the following data are necessary for planning: women farmers' needs, what they do and why, community profiles particularly with regard to gender division of labor, access to and control of resources, composition of household income and decision making about household expenditure and investment.

The Eighth National Economic and Social Development Plan (1997-2001) focuses on people-centered development. Women are given the same opportunities as men for increasing their knowledge and capabilities. Participation of women in decision-making as well as in economic, social, environmental, cultural, and political development is encouraged. Women's contributions to community economic security and developmental administration is also promoted.

Gender analysis can help planners and policy makers set the objectives of development project's realistically. The field data on gender roles in farming activities are presented in Table 15. Although men and women work side-by-side in rice fields. However, activities such as land preparation, seeding, fertilizer application, pesticide application and irrigation are considered male tasks. Women farmers are in charge of saving money and managing the household budget. The tasks of both women and men should be harvesting and marketing.

With regard to upland cropping, men's tasks are land preparation, planting, irrigation and marketing. Both men and women are involved in harvesting. In the dry season, not all of the households in the study areas grow vegetables for domestic consumption. Those whose land is near a natural pond or a stream grow vegetables, over a larger area. They take surplus products for sale to the market in town. Growing vegetables is mainly a woman's task. In some households, men help prepare the land and women are in charge of seeding, uprooting, planting, irrigation, harvesting, and sometimes marketing.

Table 15 Gender Role in Farming Activities

Activity	Sakon Nakhon			Mukdahan			Maha Sarakham			Khon Kaen			Total			
	N.A	M	F	N.A	M	F	N.A	M	F	N.A	M	F	N.A	M	F	M-F
Rice Farming	27.3	66.2	-	10.1	81.7	-	8.3	79.1	-	16.5	69.2	-	25.3	74.7	-	14.1
Land Preparation	29.9	44.2	7.8	9.2	47.7	14.7	28.4	46.2	-	49.5	64.8	2.2	29.7	50.8	6.5	31.8
Seeding	31.2	53.2	2.6	13.8	45.9	9.2	31.2	63.7	2.2	26.4	61.5	1.1	34.1	55.7	4.1	26.9
Fertilizer Application	63.6	33.8	1.3	27.5	56.0	1.8	14.7	31.9	-	7.7	48.8	-	6.6	43.5	0.8	8.2
Pesticide Application	35.1	57.1	-	34.9	15.6	4.6	45.0	11.0	-	3.3	22.0	2.2	8.8	24.7	1.9	17.9
Irrigation	27.3	2.6	5.2	9.2	1.8	5.5	83.5	1.1	1.1	91.2	2.2	3.3	89.0	1.9	3.8	82.9
Harvesting	37.7	31.2	11.7	14.7	27.5	7.3	50.5	68.1	8.8	14.3	17.6	2.2	8.8	35.9	7.3	24.7
Marketing	35.1	10.4	44.2	9.2	5.5	66.1	19.3	9.9	73.6	6.6	2.2	27.5	2.2	6.8	53.8	10.1
Saving Money																
Upland Cropping																
Land Preparation	32.5	58.4	-	19.3	68.8	2.8	9.2	57.1	1.1	8.8	58.2	-	17.6	61.1	1.1	11.1
Seeding	31.9	19.5	7.8	21.1	35.8	10.1	33.0	29.7	1.1	33.0	48.4	1.1	27.5	34.0	5.2	29.1
Fertilizer Application	51.9	23.4	5.2	25.7	36.7	4.6	33.0	44.0	1.1	16.5	48.4	-	28.6	38.6	2.7	25.0
Pesticide Application	64.9	29.9	1.3	32.1	46.8	2.8	18.3	27.5	-	4.4	40.7	-	6.6	37.0	1.1	9.0
Irrigation	54.5	28.6	1.3	38.5	11.0	3.7	46.8	4.4	-	5.5	19.8	-	9.9	15.2	1.4	20.9
Harvesting	33.8	7.8	5.2	18.3	3.7	2.8	75.2	5.5	1.1	58.2	4.4	2.2	61.5	15.2	2.7	63.0
Marketing	36.4	35.1	18.2	19.3	23.9	11.0	45.9	53.8	6.6	3.3	44.0	3.3	14.3	38.6	9.5	20.1
Saving Money	35.1	13.0	41.6	17.4	3.7	67.0	11.9	4.4	51.6	7.7	3.3	56.0	4.4	5.7	55.2	8.7
Vegetable Gardening																
Land Preparation	77.9	9.1	1.3	59.6	24.8	9.2	6.4	1.1	-	1.1	1.1	-	-	9.8	3.0	4.6
Seeding	79.2	2.6	10.4	61.5	11.0	11.0	16.5	1.1	-	1.1	1.1	-	-	4.3	5.4	6.8
Fertilizer Application	77.9	2.6	9.1	60.6	6.4	14.7	18.3	2.2	-	1.1	100.0	-	-	3.0	6.3	7.9
Pesticide Application	87.0	11.7	1.3	62.4	19.3	6.4	11.9	2.2	-	1.1	98.9	1.1	-	9.0	2.2	3.8
Irrigation	77.9	5.2	5.2	64.2	4.6	11.0	20.2	2.2	-	1.1	100.0	-	-	3.0	4.3	8.7
Harvesting	77.9	-	7.8	60.6	0.9	7.3	31.2	1.1	-	3.3	98.9	1.1	-	0.8	3.8	13.0
Marketing	84.4	2.6	6.5	60.6	7.3	5.5	26.6	2.2	1.1	-	100.0	-	-	3.5	5.5	9.2
Saving Money	84.4	3.9	10.4	59.6	0.9	33.0	6.4	-	2.2	-	100.0	-	-	1.1	12.5	2.2

Gender Role in Handicrafts or Cottage Industries

The respondents were also asked what kind of handicrafts or cottage industries that men and women are involved in the dry season at the present time. The findings were that both are engaged in handicrafts mainly for household use. These can be differentiated as follows.

<u>Males</u>	<u>Females</u>
- bamboo weaving	- cloth weaving
- preparing charcoal	- silk weaving

Housewives in the villages of Phutai, Thai Yoy and Thai Yaw are experts in hand-weaving their traditional clothing. Only the elders know how to do hand-weaving and yet they have been discouraged by the low prices. In addition, Northeastern youngsters are no longer interested in preserving this weaving culture. They turn to fashionable western dress and seek jobs in the cities. Other ethnic groups, such as the Thai Kalerng and the Thai Saw are no good at hand-weaving. Similarly, only the male elders know how to do the bamboo-weaving for home use. Since the price for bamboo utensils is poor, they have no incentive to go in for mass production.

When asked about their future plans for handicrafts or cottage industries, the majority of them (78 per cent) said they had no plans. The rest (22 per cent) need government assistance for marketing their products so that they can continue to employ their handicraft skills, particularly hand-woven silk.

Collection of Forest Produce

One of the Eighth National Economic and Social Development Plan's goals is to achieve a conservation forest area of 25 per cent of the country starting in 1997. One problem in the Northeast was the encroachment by the people into national forest reserves: the reason being that their land was infertile, so they sought new land to cultivate. The respondents were asked whether or not they themselves or their household members practiced upland cropping on land that they do not own or rent the land. The result was that almost all of them (96 per cent) said "no". Only in one case and twelve persons in Sakon Nakhon and Mukdahan respectively said they did but none in Mahasarakham and Khon Kaen did so.

The villagers' livelihood in the buffer zones in Sakon Nakhon and Mukdahan depend on the surrounding forest. The respondents reported that Forestry Department officials have promised the villagers that no trees would be felled and that they would be allowed to continue gathering food in the forest. Food collected in the buffer zones includes several kinds of mushroom, bamboo shoots, herbs and vegetables.

The survey data on collecting forest produce are presented in Table 16. The respondents usually collect fuel wood at the edge of their farmland since they are not allowed to fell trees in the forest. Dry branches fallen from the trees onto their own land are collected. Some respondents also won gas stoves. It is expected that in the long run, the number of villagers who use gas stoves will increase. The frequency of collecting fuel and wood ranges from never, to everyday, every month and every three months.

Some respondents depend on the forest for food both in the wet and dry seasons. They perhaps spend more time in the dry season searching for food. One respondent mentioned that one time he saw people from another province who went into the forest and loaded bamboo-shoots until full into his pickup truck and then drove to the local market. He wondered why they were allowed to collect forest produce from other provinces. The frequency made of the respondents in Mahasarakham and Khon Kaen reported no forest around the areas where they live. Their money has to be spent on food. Very seldom they can search for food in the village areas.

Table 16 Collecting Forest Produce

Activity	Sakon Nakhon	Mukdahan	Maha Sarakham	Khon Kaen	Total
Have you or other HH members practiced upland cropping elsewhere (where you do not own, but rather rent, land?)					
No	98.7 (76)	89.0 (97)	100.0 (91)	100.0 (91)	96.4 (355)
Yes	1.3 (1)	11.0 (12)	-		3.5 (13)
Frequency of Collecting Forest Produce					
<u>Wet season</u>					
<u>Collecting Fuel Wood</u>					
Never	9.1 (7)	17.4 (19)	24.2 (22)	24.2 (22)	19 (70)
Everyday	61.0 (47)	11.1 (12)	9.9 (9)	23.1 (21)	24.2 (89)
Every month	10.4 (8)	21.1 (23)	8.8 (8)	9.9 (9)	13 (48)
Every 3 months		0.9 (1)	4.4 (4)	5.5 (5)	2.7 (10)
<u>Searching for Food</u>					
Never	7.8 (6)	16.5 (18)	24.2 (22)	24.2 (22)	18.5 (68)
Everyday	63.6 (49)	24.8 (27)	13.2 (12)	23.1 (21)	29.6 (109)
Every month	10.4 (8)	32.1 (35)	20.9 (19)	19.8 (18)	21.7 (80)
Every 3 months	-	3.7 (4)	4.4 (4)	6.6 (6)	4.1 (15)
<u>Dry Season</u>					
<u>Collecting Fuel Wood</u>					
Never	9.1 (7)	16.5 (18)	23.1 (21)	24.2 (22)	18.5 (68)
Everyday	7.8 (6)	15.6 (17)	23.1 (21)	24.2 (22)	17.9 (66)
Every month	9.1 (7)	11.9 (13)	25.3 (23)	11.0 (10)	14.4 (53)
Every 3 months	1.3 (1)	1.8 (2)	3.3 (3)	2.2 (2)	2.2 (8)
<u>Searching for Food</u>					
Never	7.6 (6)	15.6 (17)	23.1 (21)	24.2 (22)	17.9 (66)
Everyday	63.6 (49)	23.9 (26)	6.6 (6)	16.5 (15)	26.1 (96)
Every month	9.1 (7)	26.6 (29)	7.7 (7)	7.7 (7)	13.6 (50)
Every 3 months	1.3 (1)	1.8 (2)	2.2 (2)	3.3 (3)	2.2 (8)

Conclusions

Social assessment of project development is conducted to ensure that the project suits and works successfully in the chosen rural areas. This paper presents the policy makers, planners and project managers with some facts and perceptions of the respondents in the study areas.

Approximately 6,800 households live in various selected villages in the study areas. The major occupations include rice farming, upland cropping and livestock production. Nearly half of the respondents have no income in the dry season. The problems that affect the villagers' quality of life are poverty, lack of clean drinking water, child malnutrition, and no vocational training for children who have left school. Their debt burden is a result of the combination of low yield, low prices for products, high cost of input and various factors of an unpredictable nature. The most pressing problems during the cropping season include water shortage and infertile soils. The survey data show that the majority of respondents are interested in changing their cropping pattern from monoculture to integrated farming.

The respondents' expectations about development projects based on their priorities are: water source development, good prices for farm products, improved soil fertility, high yield seeds, marketing, and loan or credit for cultivation.

The respondents' likelihood of participating in development projects is attendant on: providing information for planning, land contribution for construction and cash from 200 baht or less to 500 baht or more.

The majority of respondents is interested in participating in the government's reforestation program and in its community forest projects. The training programs they are interested in include integrated farming, improved soil and methods of growing cash crop. Other programs for the youngsters are training in skilled labor for construction, mechanics, electronics, dressmaking, hairdressing, flower making and others.

In solving water shortage, villagers try to use pumps, dig farm ponds and dig deep-tube wells.

Men and women work side-by-side in the rice fields, and in upland cropping and vegetable growing. Their tasks can be differentiated. Housewives in the villages of ethnic groups such as the Phutai, the Thai Yoy and the Thai Yaw are experts in weaving cloth and hand-woven silk. Some men are engaged in bamboo-weaving. However, the majority of respondents have no future plans because they have no monetary incentive.

As for forest produce, the villagers are not allowed to fell trees and they collect fuel wood from the edge of their land. However, some households own gas stoves.

Finally, most males and females seek food particularly in the buffer zones in Sakon Nakhon and Mukdaharn, whereas those in Mahasarakham and Khon Kaen have limitation in searching for food.

Some kind of machinery should be provided for land use management. Integrated farming, agro-forestry or community forestry are among other options available.

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4. Estimated Population in the Study Area

Province LRA	Area		Average Farm Holding (rai/household)	Estimated Population
	(rai)	(ha)		
Khon Kaen	267,920	42,871		61,413
KK 1	67,640	10,824	20.00	16,910
KK 2	14,130	2,260	16.15	4,375
KK 3	18,370	2,940	22.97	3,999
KK 4	11,740	1,879	16.21	3,621
KK 5	6,250	1,001	18.67	1,674
KK 6	149,790	23,967	24.29	30,834
Maharakham	213,440	34,146		59,496
MHS 1	2,640	422	6.05	2,182
MHS 2	59,690	9,549	20.75	14,383
MHS 3	3,080	492	8.49	1,814
MHS 4	9,510	1,521	17.00	2,797
MHS 5	13,030	2,085	11.09	5,875
MHS 6	29,790	4,766	25.72	5,791
MHS 7	10,940	1,751	14.17	3,860
MHS 8	79,620	12,738	19.87	20,035
MHS 9	310	49	18.90	82
MHS 10	4,830	773	9.02	2,677
Sakhon Nakhon	420,750	67,316		129,916
SKN 1	22,810	3,650	21.62	5,275
SKN 2	43,580	6,972	25.80	8,446
SKN 3	120,110	19,215	11.08	54,201
SKN 4	86,520	13,844	19.87	21,771
SKN 5	89,240	14,278	15.95	27,975
SKN 6	45,290	7,245	22.35	10,132
SKN 7	13,200	2,112	31.19	2,116
Mukdahan	479,270	76,676		142,118
MKD 1	103,580	16,572	(16.88)	30,681
MKD 2	75,840	12,135	(16.88)	22,464
MKD 3	106,490	17,038	16.62	32,037
MKD 4	1,860	297	(16.88)	551
MKD 5	6,030	963	(16.88)	1,786
MKD 6	700	113	(16.88)	207
MKD 7	47,020	7,521	(16.88)	13,928
MKD 8	59,420	9,506	17.21	17,263
MKD 9	52,240	8,357	(16.88)	15,474
MKD 10	1,180	188	(16.88)	349
MKD 11	13,430	2,149	(16.88)	3,978
MKD 12	11,480	1,837	(16.88)	3,400
Grand Total	1,381,380	221,009		392,943

Notes 1) Estimation population is based on gross acreage of LRA.

2) Ownership survey in Mukdahan has finished for only 2 LRAs, hence most of farm holding data are not available.

3) Parenthesized figures denote estimated figures.

4. The List of Villages for Socail Assessment in the Priority Areas

The List of Selected Villages for Social Assessment in the Priority Areas December 1997

Province	Name of Village for Interviewing						
	Amphoe	Tambon	Name of Village	Total No. of H.H	Samples		
					H.H	Local Leader	
Khon Kaen	Ban Phai	Pa Por	Mu 4 Don Puai	93	10	3	
			Mu 5 Huai Sua Tao	180	18	4	
	Nong Song Hong	Wang Hin	Mu 1 Wang Hin	96	10	3	
			Mu 2 Wang Thong	114	12	3	
			Mu 3 Nong Sala	113	12	3	
			Mu 6 Lak Dan	101	10	3	
	K. Amphoe Non Sila	Ban Han	Mu 8 Nong Nam Khum Nua	165	17	4	
			Mu 9 Nong Nam Khun Tai	100	10	3	
			Mu 10 Nong Wang	78	9	3	
			Mu 12 Nong Wang Noi	128	13	3	
				Mu 14 Kud Lhong	33	4	3
					1,201	125	35
	Mahasarakham	Borabu	Non Daeng	Mu 8 Sala	171	17	3
				Mu 9 Non Thong	124	13	3
Mu 13 Non Sa-at				67	7	2	
Na Chuk		Don Nqua Nong Rua	Mu 13 Nong Kham	77	8	3	
			Mu 1 Talat Muang	142	14	3	
			Mu 2 Nong Po	92	10	3	
			Mu 3 Hua Kai Taek	73	8	3	
				746	77	20	

Notes

- 1) There are two groups of sample as follows
 - a. 10% of household in each village
 - b. 3 leaders from each village
- 2) Most of selected villages are located in the priority area.

**The List of Selected Villages for Social Assessment in the Priority Areas
December 1997**

Province	Name of Village for Interviewing					
	Amphoe	Tambon	Name of Village	Total	Samples	
				No. of H.H	H.H	Local Leader
Sakon Nakhon	Kut Bak	Kut Bak	Mu 1 Kut bak	428	45	3
			Mu 2 Kut Bak	325	34	3
			Mu 3 Nong Song Hang	190	20	3
			Mu 4 Kut Had	275	29	3
			Mu 7 Kut Had	153	17	3
			Mu 6 Sai Kaeo	277	29	3
			Mu 5 Bua	270	27	3
		Kut Hai	Mu 1 Kut Hai	286	30	3
			Mu 6 Kut Hai	171	18	3
			Mu 4 Kho Yai	168	18	3
			Mu 5 Kho Noi	376	40	3
			Mu 2 Ngiu	87	10	3
				3,006	317	36
Mukdahan	Dong Luang	Phang Daeng	Mu 1 Phang Daeng	177	19	3
			Mu 3 Tiu	163	18	3
			Mu 4 Na Lak	65	7	3
			Mu 5 Nong Mu	96	10	3
			Mu 6 Pon Swang	75	8	3
			Mu 7 Huai Lao	53	6	3
			Mu 8 Nong Klong	103	11	3
				732	79	21

			For researcher
1.9 At the present, what is your source of water for agriculture?			
(more than 1 answer)		No(1)	Yes(2)
1. Rainwater	<input type="checkbox"/> 24
2. Irrigation water	<input type="checkbox"/> 25
3. Natural pond, creek, lake etc.	<input type="checkbox"/> 26
4. Others (specify).....	<input type="checkbox"/> 27
1.10 Do you have sufficient water for agriculture?			
1. Sufficient for the whole year	4. Not sufficient for the whole year		<input type="checkbox"/> 28
2. Not sufficient in the dry season	5. Others (specify)		
3. Not certain, some year was sufficient in the dry season. Some year was not.			
1.11 Whom did you sell your products? (more than 1 answer)			
	No(1)	Yes(2)	
1. Local trader	<input type="checkbox"/> 29
2. Local factory owner	<input type="checkbox"/> 30
3. Others (specify).....	<input type="checkbox"/> 31
1.12 Where did you transfer your products? (more than 1 answer)			
	No(1)	Yes(2)	
1. At home	<input type="checkbox"/> 32
2. At farm	<input type="checkbox"/> 33
3. At the shop in town	<input type="checkbox"/> 34
4. At the factory	<input type="checkbox"/> 35
5. Others (specify).....	<input type="checkbox"/> 36
1.13 Last year, what kind of marketing problem did you face? (more than 1 answer)			
	No(1)	Yes(2)	
1. Low price	<input type="checkbox"/> 37
2. No marketing channel	<input type="checkbox"/> 38
3. High cost of transportation	<input type="checkbox"/> 39
4. Others (specify).....	<input type="checkbox"/> 40

Porte searcher	
1.14 Net annual income (estimated).....Baht.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 41-45 <input type="checkbox"/> 46
1. Less than 15,000 Baht 2. 15,000 Baht 3. More than 15,000 Baht 4. Others (specify)	
1.15 Annual remittance (estimated)Baht.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 47-51 <input type="checkbox"/> 52
1. Less than 3,000 Baht 2. 3,001 - 4,000 Baht 3. 4,001 - 5,000 Baht 4. 5,001 and over 5. Others (specify) 9. No HH. members working outside the village	
1.16 The previous year (November 1996 - October 1997) , how was your HH. financial situation?	
1. Worse 2. Same 3. Better	<input type="checkbox"/> 53
1.17 When you have problem concerning your occupation , whom do you first consult?	
1. Village headman 5. Agricultural technician 2. Farmer friend 6. Relatives 3. Teacher 7. Land reform official 4. C.D. worker 8. Others(specify).....	<input type="checkbox"/> 54
2. Framer's expectation about integrated farming	
<i>Interviewer read the following definition for the farmer : "Integrated farming" means at least two activities of cropping and /or livestock practiced in the same area and within the same time of which each production activity is efficiently reciprocal benefited to one and other.</i>	
2.1 Have you seen or heard about integrated farming?	
1. Never 2. Yes	<input type="checkbox"/> 55

2.2 If the government agency is going to provide support to the farmer who change from monocropping to integrated farming , will you participate in the project?

1. No. because.....
.....

2. yes

2.3 How do you expect the government agency's assistance or support about factors related to integrated farming?

For researcher

56

Support expected	Level of Expectation			
	Low(1)	Medium (2)	High (3)	
Grant				
1. Digging small farm pond 1,200 cu.m. (Enough water for 1 rai in dry season)				<input type="checkbox"/> 57
2. Small scale irrigation project				<input type="checkbox"/> 58
3. Community pond				<input type="checkbox"/> 59
4. Farm road				<input type="checkbox"/> 60
5. Paving rural road				<input type="checkbox"/> 61
6. Widening rural road				<input type="checkbox"/> 62
7. Soil conservation				<input type="checkbox"/> 63
8. Free tree seeding				<input type="checkbox"/> 64
9. Free chicken baby/ fingerlings				<input type="checkbox"/> 65
10. Training on integrated farming				<input type="checkbox"/> 66
11. Study visit on integrated farming				<input type="checkbox"/> 67
12. Providing market for products				<input type="checkbox"/> 68
Soft loan				
13. Short-term loan (1 year)				<input type="checkbox"/> 69
14. Long-term loan				<input type="checkbox"/> 70

*Social Feasibility Study of Intergrated farming
Project in Land Reform Program
for Agriculture in the Upper Northeast of Thailand*

Support expected	Level of Expectation			For researcher
	Low (1)	Medium (2)	High (3)	
15. Digging big farm pond which the capacity 6,000 cu.m. for dry season crop 3-4 rai.The farmer have to apply long term credit for the extention of farm pond (4,800 cu.m.)				<input type="checkbox"/> 71
16. Improving soil fertility				<input type="checkbox"/> 72
17. Providing fertilizer (credit)				<input type="checkbox"/> 73
18. Providing seeds (credit)				<input type="checkbox"/> 74
19. Providing fodder (credit)				<input type="checkbox"/> 75
20. Others (specify)				<input type="checkbox"/> 76
3. Opinion / attitude and need of the farmer				
3.1 If you change from monocropping to integrated farming , whom do you expect being HH. labor?				
1. Son	5. HH. head and wife			<input type="checkbox"/> 5
2. Daughter	6. HH. head and son			
3. HH. head	7. All in the HH.			
4. Wife				
3.2 If you change from monocropping to integrated framing , do you have enough HH. labor to maintain your farm?				
1. Not enough	2. Enough			<input type="checkbox"/> 6
3.3 In case of answering "not enough" , how do you solve the problem of labor shortage?				
1. Hiring labor				<input type="checkbox"/> 7
2. Asking HH. member who works outside the village to come back and help farming				
3. HH. member who worked outside the village already is back home				
4. Others (specify).....				
9. Not applicable-enough labor				

			For researcher
3.4 If you practice integrated farming how do you prevent the thief from taking away your farm products? (more than 1 answer)			
	No(1)	Yes(2)	
1. Building temporary rest area	<input type="checkbox"/> 8
2. Staying overnight at the farm	<input type="checkbox"/> 9
3. Others (specify).....	<input type="checkbox"/> 10
3.5 What do you think the size of farm pond should be?			
1. Small size (1,200 cu.m.) for 1 rai of cropping in dry season (free)			<input type="checkbox"/> 11
2. Big size (6,000 cu.m.) for 3-4 rai of cropping in dry season (Soft loan)			
3.6 If you have one farm pond ,what would you like to do? (more than 1 answer)			
	No(1)	Yes(2)	
1. Rice farming	<input type="checkbox"/> 12
2. Growing fruit trees , such as 1.....2.....	<input type="checkbox"/> 13
3.....4.....			
3. Fish raising, such as 1..... 2.....	<input type="checkbox"/> 14
3..... 4.....			
4. Chicken raising	<input type="checkbox"/> 15
5. Pig raising	<input type="checkbox"/> 16
6. Cattle raising	<input type="checkbox"/> 17
7. Vegetable growing, such as 1.....2.....	<input type="checkbox"/> 18
3.....4.....			
8. Growing new crop such as 1.2.....	<input type="checkbox"/> 19
3.4.....			
9. Fast growing tree, such as 1.....2.....	<input type="checkbox"/> 20
3.....4.....			
3.7 Do you need the following training program on agriculture for improving your productivity?			
Training program	Farmer 's need		
	No (1)	Yes (2)	
1. Rice farming			<input type="checkbox"/> 21
2. Fruit tree growing			<input type="checkbox"/> 22

Training program	Farmer's need		For researcher
	No (1)	Yes (2)	
3. Fish raising			<input type="checkbox"/> 23
4. Chicken / duck raising			<input type="checkbox"/> 24
5. Pig raising			<input type="checkbox"/> 25
6. Cattle raising			<input type="checkbox"/> 26
7. Vegetable growing			<input type="checkbox"/> 27
8. Growing new crop			<input type="checkbox"/> 28
9. Growing mulberry tree			<input type="checkbox"/> 29
10. Fast growing tree			<input type="checkbox"/> 30
3.8 Besides agriculture, do you and / or your HH. members want to be engaged in off -farm job?			
1. No 2. Yes			
<input type="checkbox"/> 31			
3.9 In case of answering "no", what is your reason?			
1. No time , always busy with farming			
2.No knowledge to do other job			
3. Do not to know other job opportunity			
4. No market for product			
5. Other (specify)			
9. Not applicable , answering "yes"			
<input type="checkbox"/> 32			
3.10 In case of answering "yes" which of the following training program you and / or your HH. members are interested in? (more than 1 answer)			
	No(1)	Yes(2)	
1. Electronics	<input type="checkbox"/> 33
2. Sewing	<input type="checkbox"/> 34
3. Mechanics	<input type="checkbox"/> 35
4. Carpenter	<input type="checkbox"/> 36
5. Ceramic work	<input type="checkbox"/> 37
6. Welder	<input type="checkbox"/> 38
7. Others (specify).....	<input type="checkbox"/> 39

4. Group / local organization			For researcher
4.1 Which of the following group / local organization , you and your HH. members belong to? (more than 1 answer)	No(1)	Yes(2)	
1. BAAC	<input type="checkbox"/> 5
2. Savings group	<input type="checkbox"/> 6
3. Agricultural cooperative	<input type="checkbox"/> 7
4. Housewife group	<input type="checkbox"/> 8
5. Youth group	<input type="checkbox"/> 9
6. Others (specify).....	<input type="checkbox"/> 10
9. Not applicable / no membership	<input type="checkbox"/> 11
4.2 From which of the following group / local organization , you and / or your HH. members gain most benefit?			
1. BAAC.	5. Youth group		<input type="checkbox"/> 12
2. Savings group	6. Other (specify)		
3. Agriculture cooperative	9. Not applicable / no membership		
4. Housewife group			
4.3 Which of the following group / local organization is strong-having continuing activity / service?			
1. BAAC.	5. Youth group		<input type="checkbox"/> 13
2 Saving group	6. Others (specify)		
3. Agricultural cooperative	9. Not application / no membership		
4. Housewife group			
4.4 What kind of benefit did you gain from being member of the local organization?			
1. Low interest loan			<input type="checkbox"/> 14
2. Knowledge and information			<input type="checkbox"/> 15
3. Privilege such as buying cheap goods			<input type="checkbox"/> 16
4. Others (specify)			<input type="checkbox"/> 17
9. Not applicable , no membership			<input type="checkbox"/> 18

For researcher	
<p>4.5 How strength is the group / local organization that you belong?</p> <p>1. Low 2. Medium</p> <p>3. High (specify the group)</p> <p>9. Not applicable , no membership</p>	<input type="checkbox"/> 19
<p>4.6 In the case of not belonging to the group / local organization , are you interested in applying to be a member ?</p> <p>1. No, because</p> <p>.....</p> <p>2. Yes (specify the group)</p> <p>.....</p>	<input type="checkbox"/> 20
<p>4.7 Is it possible that you and the others in the community organize for public land management , such as for animal raising , community forestry etc.?</p> <p>1. No, because</p> <p>.....</p> <p>2. Yes, who should initiate?.....</p> <p>.....</p>	<input type="checkbox"/> 21
<p>4.8 If the answer is "yes" , do you need any training program?</p> <p>1. No, because</p> <p>.....</p> <p>2. Yes, about what?</p> <p>.....</p> <p>9. Not applicable , answer " no "</p>	<input type="checkbox"/> 22
<p>4.9 Is it possible that you and the others in the community organize for maintaining / conserving the forest?</p> <p>1. No, because</p> <p>2. Yes, who should initiate?.....</p> <p>.....</p>	<input type="checkbox"/> 23

			For researcher
4.10	Is it possible that people in the village that produce the same thing (crop / animal / handicraft) organize for production and marketing?		
	1. No, because	<input type="checkbox"/> 24
	2. Yes, who should initiate?.....	
4.11	Is it possible that people in the village donate land for public utilities such as water resource and widening rural road?		
	1. No, because	<input type="checkbox"/> 25
	2. Yes, who should initiate?.....	
4.12	What is the activity of housewife group in your community? (more than 1 answer)		
		No(1) Yes(2)	
	1. Food preservation	<input type="checkbox"/> 26
	2. Cloth weaving	<input type="checkbox"/> 27
	3. Vegetable growing	<input type="checkbox"/> 28
	4. Others (specify).....	<input type="checkbox"/> 29
4.13	Please specify the names of 3 active women leaders / housewives		
	1.	
	2.	
	3.	

☺ Thank you for your cooperation ☺

6. REPORT OF SOCIAL ASSESSMENT FOR FARMERS

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UNDERSTANDING THE FARMERS

1. Socio-economic Status

The majority of respondents (70%) are male and 30 per cent are female. Their average age is 44 years. More than half of them (53.5%) are in the age group of 30-49. About 82 per cent have primary education, 5 per cent have secondary education, nine per cent have no education, and four per cent have higher than secondary education. The average number of household members is five; four members are engaged in farmwork and one member is engaged in nonfarm work (Table 17).

The average size of farmland is 23 rai. The farmer respondents in Khon Kaen have the largest (35 rai) and those in Mukdahan have the smallest (16 rai). Nearly half of the farmers in Sakon Nakhon (48%) have farmland of less than 10 rai.

Rice farming, cassava growing and livestock production are the three major economic activities except in Khon Kaen where the percentage of respondents who grow cassava is low. However, the percentage of sugarcane growers in Khon Kaen is the highest (90%). Approximately 63 per cent are hired labor for agriculture and 37 per cent are hired labor for non-agricultural purposes. Other economic activities include cloth weaving and pisciculture. Rattan growing is practiced particularly by some respondents in Sakon Nakhon (22%), Mukdahan (6.3%) and Khon Kaen (1.6%).

2. Farmers' Agricultural Activities and Income

Table 18 reveals that almost all farming respondents (98%) depend on rainwater for agriculture. About two-thirds of them (66%) have access to water from natural ponds, creeks and lakes. They were asked whether they have sufficient water for agriculture. The majority (39.5%) said they do not have sufficient water for the whole year as where more than half in Mahasarakam (58%) said they have insufficient water in the dry season. Only about one-third in Sakon Nakhon (32%) have enough water for the whole year.

Approximately half of the respondents (50%) sell their agricultural products to local traders and nearly half (47%) to local factory owners. The majority of them transferred their agricultural products to factories (49.3%) or to a shop in town (38.8%). Some of them transferred their products at home (16.6%) and on farm (6%).

The marketing problems they faced last year include low prices, no marketing channels, and high transportation cost, especially in Mukdahan and Khon Kaen.

About 65 per cent reported an estimated net annual income of less than 15,000 baht and the average estimated net annual income is 14,841 baht. The respondents in Mukdahan have the lowest estimated net annual income (6,443 baht) which is far below the poverty line. Only in Khon Kaen did the respondents have the highest average estimated net annual income (28,556 baht).

Remittance is another source of income for households whose members work elsewhere. Average estimated annual remittance is 3,679 baht. The respondents in Khon Kaen

reported the highest average estimated annual income (7,212 baht) and those in Mukdahan reported the lowest (1,582 baht).

The respondents were then asked to evaluate their financial situation from November 1996 to October 1997. About 66 per cent said their financial situation in 1997 was worse.

When the farming respondents have problems concerning occupation, the person they first consult varies from province to province. In Mahasarakam, Mukdahan and Khon Kaen, their relatives play an important role in offering advice. In Sakon Nakhon, however, they first consult agricultural technicians. The next person from whom the respondents in every province seek advice is the village headman.

FARMERS' PERCEPTION

1. Integrated Farming

When asked "Have you seen or heard about integrated farming?" the majority of respondents in Sakon Nakhon (79%) and Khon Kaen (76%) said that they were aware of integrated farming whereas only about half in Mukdahan (52%) and Mahasarakam (49%) had heard of it. They were further asked, "Will you participate in an integrated farming project?". The majority of the respondents in every province said they would. The reasons given by the few (5.7%) who said "no" include growing old; planning to move to other provinces; having small farm; having no time; having labor shortage; poor health; lack of knowledge and experience; and no capital for investment (Table 19).

The farmers' expectations about government support for integrated farming is shown in Table 20. The majority of them expressed high expectations with regard to small farm ponds (87%), small-scale irrigation projects (83%), community ponds (79%) and large farm ponds (53%). It is important to note that a greater number of farming respondents as well as local leaders have high expectations of small farm ponds rather than large farm ponds. Since the villagers are facing the problem of water insufficiency, all kinds of water resource development are needed. The conditions for large farm ponds is that the farmers have to obtain credit for the enlargement of a 1,200 cu.m. farm pond to a 6,000 cu.m. farm pond. More detailed information especially on the advantages of large farm ponds may be required for the farmers' final decision on the size of farm ponds.

With regard to credit, more respondents had high expectations of long-term loans, rather than short-term loans. The majority reported that provision of credit in kind, i.e., fertilizer, seeds, and fodder is greatly anticipated. Farming respondents also responded positively to free tree seedlings, chicks and / or fingerlings.

It is obvious that soil conservation and soil fertility cannot be achieved without substantial external assistance. Farmers' participation in all stages is also the key to success of the development of a strategy for sustainable soil fertility. The majority of farmers reported high expectations of soil conservation (88%) and improving soil fertility (81%). Training and study visits about integrated farming is eagerly anticipated. In this way, the farmers will be able to obtain more knowledge and experience before they make any final decision about changing their farming patterns.

With regard to improving community infrastructure, the respondents had high hopes of farm road construction (87%), paving rural roads (92%) and widening rural roads (86%). About 94 per cent of the respondents perceived the market for products as an important incentive for agricultural development. Improvement of community infrastructure can improve and increase marketing channels for their farm products.

2. Future Plan for Practicing Integrated Farming

The respondents were asked who will undertake household labor if they change from monocropping to integrated farming. The majority in Khon Kaen (78.4%), Mukdahan (67.1%) and Mahasarakam (51.9%) said the whole household will. The percentage of respondents in Sakon Nakhon who stated that the household head will undertake household labor is greater than that who reported of all in the household.

When asked whether or not they have enough household labor to keep their in farm operation, approximately one-third of them said they will not have enough labor if they change from monocropping to integrated farming. In this case, hiring labor is one way to solve the problem. Some of them will ask household members who work elsewhere to return back home and help with the farming.

To prevent their farm products, being stolen, about 80% (except in Mahasarakam) plan to build temporary rest areas and stay overnight at their farms.

The farmer respondents were once again asked, "How big should a farm pond be?". More than 80 per cent of the respondents in Sakon Nakhon, Mukdahan and a little more than half in Khon Kaen think that farm ponds should be 1,200 cu.m. Approximately two-thirds of prefer a larger size of 6,000 cu.m.

With regard to their plan for integrated farming, and supposing that each of the respondents has one farm pond, the majority of them chose to practice the following activities.

- Rice farming
- Pisciculture
- Vegetable growing
- Growing fruit trees
- Chicken raising
- Cattle raising

Detailed information regarding fruit trees and vegetables that the respondents in each province would like to grow are shown in Table 21. The kinds of fruit tree they all chose include mango; papaya; banana; coconut; sweet tamarind and jackfruit. Popular vegetables among the villagers are green leaf, shallot, garlic, coriander and cabbage. Only about one fourth of the respondents would like to grow fast growing trees identified as Eucalyptus, pine, neem rubber and acacia.