CHAPTER 2

A STUDY OF THE MCKEAN VILLAGE EXTENSION SERVICE

I. INTRODUCTION

Traditionally, farmers in northern Thailand have been practicing land-extensive shifting cultivation. A sloping hillside would be cleared of forest or brush, planted for a few years and then left fallow for many years when it's fertility declined. However, in recent years, the population density in the hills has significantly increased due to both natural growth rate and in- migration, resulting in greater competition for crop land. At the same time, the Thai government has been making an effort to set aside large tracts of land for reforestation. Unfortunately, nearly all of the reforested land is former crop land. The combination of population growth and reforestation has made a great demand on crop land. Therefore, the traditional method of shifting cultivation is no longer suitable for northern Thailand and farmers are looking for new ways to maintain soil fertility in their fields.

Compounding this problem is a rapid change in the traditional way of life of villagers in northern Thailand. One of the most significant changes can be seen in the attitudes of the younger generation towards consumer-oriented values generated by the media. This demand for consumer goods brings added pressure on the rural farmer to raise more income from his land.

The combination of poor soil fertility and rising demands for consumer products is causing many farmers to sell their land to owners of large industrialized farms and migrate to the urban centers. The traditional farming methods cannot produce the income to compete with the new high technology farming which propels the process of change. In addition to this, entrepreneurs are taking advantage of the situation to buy up land to develop resorts and other facilities geared for tourism. This has led to a devastating effect on family stability and the structure of the rural communities.

Experts in environmental studies and in rural development are increasingly concerned about these trends. Both the Payap Research and Development Institute and the Village Extension Service under the McKean Rehabilitation Institute are currently working on projects to deal with these problems. The staff of both these institutions have been meeting to discuss these issues over the past several months. The Village Extension Service staff are trying to determine whether their efforts are on target in dealing with problems that are occurring in northern Thailand. Has the VES effectively encouraged farmers to be willing to accept new ecologically sound farming methods geared towards sustainability? How can their methods of disseminating information within their project areas be improved? A research paper in this field will not only benefit McKean Rehabilitation Institute but can be shared with other people who are conducting research, working in rural development projects in northern Thailand or who are concerned about the welfare of the rural poor.

This research study must consider the environmental, social and psychological changes that are occurring so rapidly in the north. It is essential for anyone planning to engage in development activities to conduct research of this nature prior to planning or implementing a development project in order to understand and effectively deal with the problems facing the villager today. It is also essential to reevaluate the same program many times during the years of implementation to

keep abreast of the changing environment and to determine whether the project has remained on task. Therefore, a re-evaluation after a period of five years was chosen as an appropriate indicator of effectiveness.

In order to get a picture of the projects under the VES, the researchers initially spent several weeks reviewing various background materials that McKean personnel had compiled over the past nine years or since the beginning of the Village Extension Service. Discussions regarding the objectives of the evaluation and a review of the sample questionnaires to see if they were appropriate for use in the villages, led to the development of a format to effectively meet the objectives of the evaluation.

Field visits occurred between May 8-14, 1990. Student interviewers from Payap University with a good knowledge of the northern Thai language were hired to conduct the interviews. In each village, participants of the Organic Farming Demonstration Project and the Alternative Crop Protection Project were interviewed separately. In addition, non-participants were interviewed in every area. Project participants were informed ahead of time to meet with the interviewers to facilitate rapid and effective coverage.

A. BACKGROUND

The McKean Rehabilitation Institute started a Village Extension Service (VES) in 1981 to help rehabilitate their patients who were from a rural background. In 1983, this Village Extension Service began its Organic Farming Demonstration Project (OFDP) to seek ways to demonstrate efficient and appropriate land use by employing agricultural methods that improve soil conditions and crop production. In 1987, the Village Extension Service observed an increasing consciousness among farmers concerning the use of chemicals due to economic and health reasons. Many farmers were eagerly waiting for a feasible alternative crop protection scheme. So the Alternative Crop Protection Project (ACPP) was formed, jointly with the McKean Rehabilitation Institute and the Appropriate Technology Association in Bangkok.

II. THE ORGANIC FARMING DEMONSTRATION PROJECT

This project was started in March, 1983, for the purpose of guiding small farmers towards achieving self sufficiency and productivity, with particular orientation towards environmental stability. The following information about the objectives, project activities and project area of the OFDP was taken from the Interim OFDP Report 1985/86.

A. OBJECTIVES OF THE PROJECT

1. To enable small farmers to improve and maintain their crop yields through environmentally sound and low-cost measures.
2. To enable small farmers to obtain and make use of suitable farm and household implements.
3. To enable small farmers to utilize home-grown plants.
4. All farmers in contact villages will obtain information on viable methods to regenerate and stabilize soil fertility and on the management of appropriate land use.

5. Interested farmers will receive advice and assistance to carry out demonstrations on organic farming methods as part of their work plan.
6. Selected project participants will be provided with suitable implements for on-farm testing and further dissemination.
7. Farmers in contact villages will make increased use of home-grown food and feedcrops.
8. Farmer's representatives and staff persons will be given opportunities to participate in relevant training sessions and workshops.

B. ACTIVITIES OF THE PROJECT

1. Improvement of cropping patterns:
   -double cropping
   -feed grains for farm use
   -mixed (alley) cropping
   -ley farming
   -emergency crops
   -seed bank
   -soil survey
2. Basic organic gardening
3. Tree planting
4. Draft animal implements and appropriate equipment
5. Information services
6. Management

C. PROJECT AREA

Ten rural villages are covered by the Organic Farming Demonstration Project. They are:

1. Tan Dok Mai*
2. Na Nikhon
3. Kod Pa Wai*
4. Dan Muang*
5. San Pa Por*
6. Huey Dork Khem
7. Canaan
8. Ban Den*
9. Bang Hai
10. New Life Foundation (Lee)

* = Villages visited during the evaluation

D. STATISTICAL DATA

The migratory patterns of the population studied show that all of the villagers are well established in their villages, having lived there for over five years. In Table 1, it can be seen that 33% of the population have never moved and 67% moved over five years ago. This shows that these villagers have not yet been affected by the recent pattern of urban migration which is seen in other parts of northern Thailand. It would be interesting to note how future patterns change, or whether the projects conducted under the McKean VES are preventing the migration from occurring.

TABLE 1: MIGRATION STATUS BY VILLAGE

Village	Never Moved	%	Moved over 5 years ago	%	Total Number Interviewed	%
TAN DOK MAI	0	0	14	100	14	19
BAN DEN	10	56	8	44	18	25
KOD PA WAI	3	25	9	75	12	16
DAN MUANG	8	57	6	43	14	19
SAN PA POR	3	20	12	80	15	21
TOTAL	24	33	49	67	73	100

When examining the education of the population studied, seen in Table 2, it appears that 45% of the total population interviewed have received between four to six years of education. However, this is slightly misleading because 50% of the population interviewed at Kod Pa Wai have had no education at all. At the same time, 33% of the village participants of San Pa Por have had over six years of education. The table does show that the villagers of both Kod Pa Wai and Dan Muang have had significantly less education than the others. The villagers of San Pa Por had received the most education of the five villages visited.

TABLE 2: EDUCATION LEVEL BY VILLAGE

Village	None	%	1 - 4 years	%	4-6 years	%	Over6 years	%	Total# Interviewed	%
TAN DOK MAI	3	21	4	29	6	43	1		14	19
BAN DEN	3	17	4	22	10	56	1		18	25
KOD PA WAI	6	50	2	17	4	33	0		12	16
DAN MUANG	2	14	7	50	5	36	0		14	19
SAN PA POR	2	13	0	0	8	53	5		15	21
TOTAL	16	22	17	23	33	45	7		73	100

Table 3 shows the general income level of the villagers interviewed and a general pattern indicating where that income is coming from. The high income level seen in San Pa Por has affected the results of the total average (seen at the bottom of the table) of the population. Kod Pa Wai is the poorest village with an average total income of only 6,608 baht per year. The majority of the income for the villagers of Kod Pa Wai comes from agricultural production so they will show a greater yearly fluctuation of income levels depending on weather and soil conditions. The villagers of Tan Dok Mai, on the other hand, depend on external labor activities for a majority of their income, which would show less yearly fluctuation. The average income of the villagers in San Pa Por is four times as much as the average in Tan Dok Mai, Ban Den or Kod Pa Wai and almost double that of Dan Muang.

TABLE 3: AVERAGE INCOME BY VILLAGE

Village	Agricul. Income	Labor Income	Total Income
TAN DOK MAI	2310	5686	7996
BAN DEN	6661	2005	8666
KOD PA WAI	5032	1575	6608
DAN MUANG	17759	714	18704
SAN PA POR	29505	12273	31779
TOTAL AVERAGE	11864	2392	14257

Although San Pa Por has four times the income of Tan Dok Mai, Ban Den and Kod Pa Wai, Table 4 shows us that it has less than double the amount of land. By examining Table 5, a significant difference can be seen in the amount of income generated per rai. This variance could be caused by a number of factors but does indicate that the villagers of San Pa Por are more effectively using their land.

The fact that the villagers of Tan Dok Mai are cultivating land illegally makes their future less secure. They have no land deeds to be able to use as collateral to borrow money from banks or have the flexibility to plan long-term development of this land. Villagers with legal land will have more motivation to implement long-term projects. The price of land in the San Pa Por area is causing many farmers to sell their land which threatens the stability of existing communities. This sale of land is sometimes forced on the farmers when access to their land is cut off by the sale of surrounding farms. This trend was also noted in the Kod Pa Wai area where land developers are taking advantage of the naiveté and ignorance of the villagers (see Table 2 to note education level of Kod Pa Wai villagers).

TABLE 4: AVERAGE CULTIVATED LAND BY VILLAGE

Village	Legally owned	Illegal land	Total land
TAN DOK MAI	0.0	9.1	9.1
BAN DEN	9.3	4.1	9.9
KOD PA WAI	9.8	9.7	10.5
DAN MUANG	15.0	6.2	17.6
SAN PA POR	15.6	12.8	17.2
TOTAL AVERAGE	12.2	8.8	12.8

TABLE 5: AVERAGE AGRICULTURAL INCOME PER RAI

Village	Agricul. Income	Average total land	Income per rai
TAN DOK MAI	2310	9.1	253.8
BAN DEN	6661	9.9	672.8
KOD PA WAI	5032	10.5	479.2
DAN MUANG	17759	17.6	1009.0
SAN PA POR	29505	17.2	1715.4
TOTAL AVERAGE	11864	12.8	926.9

APPENDIX I lists the major crops grown in the five villages. Following the crop, the number of people in each village growing that crop and what percent of the total number of people interviewed in the village are growing that crop are listed. The next table shows the number of years the crop has been grown followed by tables showing yearly fluctuations of price and yield to compare how the villagers from the different areas perceive their conditions. APPENDIX I also shows the popularity and trends of crops grown in each of these areas. For example, upland rice was more popular ten years ago then it is today. Ginger and garlic, on the other hand, have only recently gained popularity among the rural farmers. A detailed study, expanding on this information, would be beneficial towards helping villagers increase their income.

1. Project Activities:

Table 6 shows the various organic farming demonstration techniques implemented in each village. In Tan Dok Mai, for example, 13 farmers implemented 26 different conservation farming methods. This does not indicate that only two methods were implemented by each of the 13 participants but rather that a large range of project activities were introduced in that village to the 13 participants. It is interesting to note that in San Pa Por, which has the highest income, only 10 conservation farming methods were introduced, whereas in Tan Dok Mai, where the income is the lowest, the highest number (26) of conservation methods were introduced. For an explanation of method codes, see APPENDIX V.

TABLE 6: CONSERVATION METHOD BY VILLAGE

Method	Tan Dok Mai	Ban Den	Kod Pa Wai	Dan Muang	San Pa Por	Total
A11	0 0%	0 0%	2 13%	0 0%	1 10%	3 4%
A12	0 0%	1 9%	0 0%	0 0%	2 20%	3 4%
A20	1 4%	0 0%	0 0%	1 6%	0 0%	2 2%
B31	0 0%	0 0%	3 19%	0 0%	0 0%	3 4%
B32	1 4%	1 9%	0 0%	0 0%	0 0%	2 2%
B41	0 0%	1 9%	0 0%	0 0%	0 0%	1 1%
B42	1 4%	0 0%	2 13%	0 0%	0 0%	3 4%
B52	2 8%	0 0%	0 0%	0 0%	0 0%	2 2%
B61	5 19%	2 18%	0 0%	0 0%	0 0%	7 9%
B62	0 0%	0 0%	0 0%	0 0%	1 10%	1 1%
C10	0 0%	0 0%	0 0%	1 6%	0 0%	1 1%
C21	0	0	0	1	0	1

	0%	0%	0%	6%	0%	1%
C24	1 4%	0 0%	0 0%	0 0%	0 0%	1 1%
C33	0 0%	0 0%	1 6%	0 0%	0 0%	1 1%
C34	1 4%	0 0%	0 0%	0 0%	0 0%	1 1%
D11	0 0%	0 0%	0 0%	1 6%	1 10%	2 2%
E12	0 0%	0 0%	0 0%	1 6%	0 0%	1 1%
E13	0 0%	0 0%	2 13%	0 0%	0 0%	2 2%
E21	0 0%	0 0%	0 0%	0 0%	1 10%	1 1%
E23	0 0%	0 0%	1 6%	0 0%	0 0%	1 1%
E30	1 4%	0 0%	0 0%	0 0%	0 0%	1 1%
G11	0 0%	0 0%	1 6%	0 0%	0 0%	1 1%
H11	1 4%	0 0%	0 0%	0 0%	0 0%	1 1%
H12	1 4%	1 9%	0 0%	0 0%	0 0%	2 2%
H21	0 0%	0 0%	0 0%	1 6%	0 0%	1 1%
I11	0 0%	0 0%	0 0%	4 22%	1 10%	5 6%
I12	1 4%	0 0%	0 0%	1 6%	0 0%	2 2%
I22	1 4%	0 0%	0 0%	0 0%	0 0%	1 1%
K10	3 12%	1 9%	4 25%	3 17%	2 20%	13 16%
K21	2 8%	0 0%	0 0%	1 6%	0 0%	3 4%
K22	1 4%	4 36%	0 0%	3 17%	1 10%	9 11%
K30	1 4%	0 0%	0 0%	0 0%	0 0%	1 1%
L31	2 8%	0 0%	0 0%	0 0%	0 0%	2 2%
TOTAL	26 100%	11 100 %	16 100%	18 100%	10 100%	81 100%
NO. OF PARTICIPANTS	13	8	8	7	7	43

* - for explanation of symbols, see APPENDIX V.

In Table 7, the frequency represents the number of activities implemented in each village, not the number of people implementing the activity because in many cases, a farmer is implementing more than one conservation method on his fields. See APPENDIX III to show the number of conservation methods implemented by the participants. It should be noted that this table was determined from the questionnaires and is inconsistent with the information submitted by the staff of the VES. This could be due to a number of reasons; confusion by the participants, improper record-keeping by the VES staff or a misunderstanding when the questions were asked during the interviews and should be taken into account for future follow-up or reference.

TABLE 7: NUMBER OF ACTIVITIES PER VILLAGE

Village	Frequency	Percent
TAN DOK MAI	26	32.1
BAN DEN	11	13.6
KOD PA WAI	16	19.8
DAN MUANG	18	22.2
SAN PA POR	10	12.3
TOTAL	81	100.0

As seen in Table 8, contour hedging was the most widely used conservation farming method comprising 32.1% of the overall activities. This was followed by double intercropping B (UR/HB relay cropped) at 23.5%.

TABLE 8: NUMBER OF ACTIVITIES BY GROUP

Method	Frequency	Percent
Rice cultivation		
Rotation	8	9.9%
Double/Inter B	19	23.5%
Corn cultivation		
Mulch	5	6.2%
Rotation	2	2.5%
Other field crops		
Double/Intercrop	6	7.4%
Other field crops		
Double/Intercrop	1	1.2%
Cover crops		
in orchards	4	4.9%
in upland fields	8	9.9%
hedges	26	32.1%
Agroforestry		
Alley cropping	2	2.5%
TOTAL	81	100%

In Table 9, the emphasis of which conservation method the VES is promoting in each of the villages is portrayed. Contour hedging was incorporated into all five villages. There is a variation, but not a specific pattern, of conservation methods implemented. This indicates that the people managing the project are introducing ideas that are appropriate for the geographical setting of each project area and not following any preconceived set formula.

TABLE 9: SUMMARY OF MAJOR METHODS USED BY VILLAGE

Village	Major Method	Number	Percent
TAN DOK MAI	Double/Inter B	9	35%
	Hedges	7	27%
	Mulching	2	8%
	Orchards	2	8%
	Uplands	2	8%
BAN DEN	Hedges	5	45%
	Double/Inter B	4	36%
	Rotation A	1	9%
	Orchards	1	9%
KOD PA WAI	Double/Inter B	5	31%
	Hedges	4	25%
	Double/Inter E	3	19%
	Rotation A	2	13%
DAN MUANG	Hedges	7	39%
	Uplands	5	28%
	Mulching	2	11%
	Rotation	1	6%
SAN PA POR	Rotation A	3	30%
	Hedges	3	30%

During the implementation period of this project, the VES gave certain inputs to promote their conservation methods in each village. 42% of the participants only received seeds and 46% received seeds and money. Although in Table 12 it shows that 58% of the participants had contracts, one would assume that only those who received money also had contracts. However, if one compares Table 10 and 11, it can be seen that this is not the case. For example, in Tan Dok Mai, where 62% received seeds and money, only 23% claimed to have a contract with the VES. Also in San Pa Por, where only 29% of the participants received seeds and money, 71% claimed to have a contract. It should be noted that when questioned about contracts, there was a large variation in the understanding of the question. Some felt that only written contracts should be stated, others felt that verbal contracts also should be recorded. In any case, all of the participants (excluding one) claimed to have received at least seeds from the VES to implement their conservation farming methods.

See APPENDIX III for information on who contacted the participants about the OFDP project. It should be noted that at least 86% of the 43 participants were contacted by Klaus Prinz prior to implementing the conservation farming methods. It is assumed that some explanation or training occurred before he distributed the seeds to the villagers.

TABLE 10: INPUTS RECEIVED BY THE FARMER FROM THE VES

Inputs	Tan Dok Mai	Ban Den	Kod Pa Wai	Dan Muang	San Pa Por	Total
Seeds	5 38%	3 38%	4 50%	1 14%	5 71%	18 42%
Money	0 0%	1 13%	0 0%	0 0%	0 0%	1 2%
Seeds and Money	8 62%	4 50%	4 50%	6 86%	2 29%	24 56%
Total	13 100%	8 100 %	8 100%	7 100%	7 100%	43 100%

TABLE 11: FARMER HAD CONTACT WITH VES

Inputs	Tan Dok Mai	Ban Den	Kod Pa Wai	Dan Muang	San Pa Por	Total
No contact	10 77%	4 50%	0 0%	2 29%	2 29%	18 42%
Had contact	3 23%	4 50%	8 100%	5 71%	5 71%	25 58%
Total	13 100%	8 100 %	8 100%	7 100%	7 100%	43 100%

2. *Attitudes of the villagers:*

There is a slight discrepancy between the total number of responses (79) and the total number of activities (81). It is interesting to note that at least 84% of the responses recorded were good or excellent towards the conservation methods and only 10% negative. It should also be noted that the methods that had a fair amount of participation and an extremely positive response were B42 (upland rice with soybean, row intercropped), E13 (corn with black bean, relay cropped), and I11 (weed suppression vine types with tua bae). B61 (upland rice with lablab bean, relay cropped) had 29% negative response and K22 (leucaena with pigeon pea or other bean) had a 22% negative response. Also noteworthy, but not implemented to a large extent, were B32 (paddy rice with peanut, double cropped), D11 (corn with peanut, rotation) and K21 (leucaena with pigeon pea, mixed) with 50% negative responses.

TABLE 12: BENEFIT BY CONSERVATION METHOD

Method	Wasted Time	Same	Good	Excellent	Total
A11	0 0%	1 33%	1 33%	1 33%	3 100%
A12	0 0%	0 0%	3 100%	0 0%	3 100%
A20	0 0%	0 0%	1 50%	1 50%	2 100%
B31	0 0%	1 33%	1 33%	1 33%	3 100%
B32	1 50%	0 0%	1 50%	0 0%	2 100%
B41	0 0%	0 0%	1 100%	0 0%	1 100%
B42	0 0%	0 0%	0 03%	3 100%	3 100%
B52	0 0%	0 0%	2 100%	0 0%	2 100%
B61	2 29%	0 08%	5 71%	0 0%	7 100%
B62	0 0%	0 0%	0 0%	1 100%	1 100%
C10	0 0%	0 0%	0 0%	1 100%	1 100%
C21	0 0%	0 0%	1 100%	0 0%	1 100%
C24	0 0%	0 0%	1 100%	1 100%	1 100%
C33	0 0%	0 0%	0 0%	1 100%	1 100%
C34	0 0%	0 0%	1 100%	0 0%	1 100%
D11	1 50%	0 0%	1 50%	0 0%	2 100%
E12	0 0%	0 0%	1 100%	0 0%	1 100%
E13	0 0%	0 0%	0 03%	2 100%	2 100%
E21	0 0%	0 0%	1 100%	0 0%	1 100%
E23	0 0%	0 0%	1 100%	0 0%	1 100%
E30	0 0%	0 0%	1 100%	0 0%	1 100%
G11	0 0%	1 100%	0 0%	0 0%	1 100%
H11	0 0%	0 0%	0 0%	1 100%	1 100%
H12	0	0	2	0	2

	0%	0%	100%	0%	100%
H21	0 0%	0 0%	1 100%	0 0%	1 100%
I11	0 0%	0 0%	3 60%	2 40%	5 100%
I12	0 0%	0 0%	1 100%	0 0%	1 100%
I22	1 4%	0 0%	1 100%	0 0%	1 100%
K10	1 8%	0 0%	7 54%	4 31%	13 100%
K21	1 50%	0 0%	1 50%	0 0%	2 100%
K22	2 22%	0 0%	7 78%	0 07%	9 100%
K30	0 0%	0 0%	1 100%	0 0%	1 100%
L31	0 0%	1 50%	1 50%	0 0%	2 100%
TOTAL	8 10%	5 6%	48 61%	18 23%	79 100%
NO. OF PARTICIPANTS	13	8	8	7	43

* - for explanation of symbols, see APPENDIX V.

TABLE 13: PERCEIVED BENEFITS OF THE PROJECT

	Frequency	Percent
Waste of Time	8	10.1%
Same as old way	5	6.3%
Good	48	60.8%
Excellent	18	22.8%
TOTAL	79	100%

In Table 14, it is interesting to note that contour hedging and double intercropping B, which are the most implemented conservation farming methods, have a positive response from the participants.

TABLE 14: BENEFIT BY CONSERVATION METHOD GROUP

Type	Wasted Time	Same	Good	Excellent	Total Number of Responses	Total
Rotation	0 0%	1 13%	5 63%	2 25%	8 100%	10%
Double/ Inter b	3 16%	1 5%	10 53%	5 26%	19 100%	24%
Mulch	0 0%	0 0%	3 60%	2 40%	5 100%	6%
Rotation	1 50%	0 0%	1 50%	0 0%	2 100%	3%
Double/ Inter E	0 0%	0 0%	67%	2 33%	6 100%	8%
Double/ Inter F	0 0%	1 100%	0%	0 0%	1 100%	1%
Orchards	0 0%	0 0%	3 75%	1 25%	4 100%	5
Uplands	0 0%	0 0%	5 71%	2 29%	7 100%	9%
Hedges	4 16%	1 4%	16 64%	4 16%	25 100%	32%
Alley	0 0%	1 50%	1 50%	0 0%	2 100%	3%
Total	8 10%	5 6%	48 61%	18 23%	79 100%	100 %

The participants in each village were asked to explain about the conservation methods that they were implementing. The interviewer determined whether the participants knowledge seemed to be good, average or poor. There were some limitations to this method due to the fact that the interviewers did not have a good understanding of the conservation methods themselves. This situation was set up deliberately to ascertain which participant could explain the methods to people who did not have any previous knowledge of the subject.

From Table 15 it appears that mulching was the most understood method and alley cropping and double intercropping B the least understood method. Overall, the table shows that the participants seemed to have a fairly good understanding of the conservation farming methods.

The participants were also asked how they received their training. The responses, however, were disappointing because the participants were confused about the question.

TABLE 15: UNDERSTANDING OF METHOD BY CONSERVATION METHOD GROUP

Type	Good	Average	Poor	Total
Rice Rotation	5 71%	2 29%	0 0%	7 100%
Double/ Inter	8 47%	4 24%	5 29%	17 100%
Mulch	4 80%	1 20%	0 0%	5 100%
Corn Rotation	2 100%	0 0%	0 0%	2 100%
Double/ Inter	2 33%	4 64%	0 0%	6 100%
Other field crops Double/Inter	1 100%	0 0%	0 0%	1 100%
Cover crops in Orchards	3 75%	1 25%	0 100%	4 100%
In Upland fields	5 63%	2 25%	1 13%	8 100%
Agroforestry Hedges	16 62%	5 19%	5 19%	26 100%
Alley	0 0%	1 50%	1 50%	2 100%
Total	46 59%	20 26%	12 15%	78 100%

TABLE 16: LEVEL OF UNDERSTANDING OF METHODS

Understanding	Frequency	Percent
Good	46	59.0%
Average	20	25.6%
Poor	12	15.4%
TOTAL	78	100.0%

When asked if they thought it was worthwhile to share their knowledge with others, as seen in Table 17, 82% of the participants felt that it was worth sharing and 18% felt that it wasn't. There was a discrepancy in the figures because only 38, out of 43 participants responded. Five did not answer the question. It is interesting to note that 83.6% of the participants thought that the results of their OFDP demonstrations were either good or excellent (Table 14), which correlates with the number that thought that the conservation methods were worth sharing. 100% of participants in Kod Pa Wai, Dan Muang and San Pa Por thought that the conservation farming methods were worth sharing with others.

TABLE 17: KNOWLEDGE IS WORTH SHARING

	Tan Dok Mai	Ban Den	Kod Pa Wai	Dan Muang	San Pa Por	Total
Not worth sharing	4 36%	3 38%	0 0%	0 0%	0 0%	7 18%
Worth sharing	7 64%	5 63%	7 100%	6 100%	6 100%	31 82%
Total	11 100%	8 100 %	7 100%	6 100%	6 100%	38 100%

Table 18 shows how the participants shared their knowledge of conservation farming methods with other villagers in each of the locations visited. Here again, Tan Dok Mai and Ban Den show the least amount of willingness to share with others which correlates with the figures seen in Table 18. The most popular method of sharing knowledge was by verbal communication only (53%). San Pa Por had 43% of their participants sharing verbally, manually and with seeds. It should be noted that although they had the most positive attitude towards sharing and were the most willing to share in a variety of way, the VES have only implemented ten types of conservation farming methods in this village.

TABLE 18: FARMER HAS SHARED KNOWLEDGE

	Tan Dok Mai	Ban Den	Kod Pa Wai	Dan Muang	San Pa Por	Total
Never	5 38%	2 25%	2 25%	1 14%	1 14%	11 26%
Verbal	6 46%	5 63%	4 50%	5 71%	3 43%	23 53%
Manual Assistance	1 8%	0 0%	0 0%	0 0%	0 0%	1 2%
Shared seeds	0 0%	1 13%	0 0%	0 0%	0 0%	1 2%
Combination of all three	1 8%	0 0%	2 25%	1 14%	3 43%	7 16%
Total	13 100%	8 100 %	8 100%	7 100%	7 100%	43 100%

Comparing Table 19 with Table 17 portrays an interesting pattern. For example, in Tan Dok Mai 75% of the participants felt that they had enough training but 36% felt it was not worth sharing. In San Pa Por, 80% felt that their training was not enough and 100% thought that the methods were worth sharing with others. This would indicate that there is definitely more interest in San Pa Por towards conservation farming methods.

TABLE 19: FARMER RECEIVED ENOUGH TRAINING FROM PROJECT

	Tan Dok Mai	Ban Den	Kod Pa Wai	Dan Muang	San Pa Por	Total
Not enough	3 25%	3 38%	3 50%	4 57%	4 80%	17 45%
Enough	9 75%	5 63%	3 50%	3 43%	1 20%	21 55%
Total	12 100%	8 100 %	6 100%	7 100%	5 100%	38 100%

Table 20 is inconsistent with the data found in the last three tables. In Tan Dok Mai, for example, 78% felt that they were willing to teach others but up to this point, they have portrayed the lowest amount of actual sharing with others and the lowest percentage of feeling that the methods were worth sharing with others. Whereas in San Pa Por, where 86% shared with knowledge with others and a 100% positive attitude, only 57% said that they were willing to teach others. By in large, after examining Tables 17 through 20, one would feel that the participants would benefit from additional training and be willing to share their knowledge after being trained.

TABLE 20: FARMER WILLING TO TEACH OTHERS

	Tan Dok Mai	Ban Den	Kod Pa Wai	Dan Muang	San Pa Por	Total
Not willing	2 22%	3 38%	2 25%	2 29%	3 43%	12 31%
Willing	7 78%	5 63%	6 75%	5 71%	4 57%	27 69%
Total	9 100%	8 100 %	8 100%	7 100%	7 100%	39 100%

3. *Impact of the project:*

The significant information in Table 21 is the fact that 54% of the participants involved in contour hedging (one of the most emphasized methods of the OFDP), will not continue it in the future. This is inconsistent with the data shown in Table 15 which shows that 80% of these same participants had a positive attitude towards this conservation farming method. Double intercropping B, on the other hand, which is the next most emphasized conservation farming technique, shows that 79% of the participants want to continue using the method. Most of the double intercropping B method is being implemented in Tan Dok Mai and Ban Den where they have the worst attitude and understanding but want to continue using it anyway.

In general, it appears that with 67% willing to continue using the conservation farming methods, combined with the data obtained about the attitudes of the participants indicates that there is a good potential for the continuation of the OFDP program.

TABLE 21: WILL USE METHOD BY CONSERVATION METHOD GROUP

Type	Will Use	Won't Use	Total
Rice Rotation	0 0%	8 100%	8 100%
Double/ Inter	4 21%	15 79%	19 100%
Mulch	2 40%	3 60%	5 100%
Corn Rotation	0 0%	2 100%	2 100%
Double/ Inter	1 17%	5 83%	6 100%
Other field crops Double/Inter	1 100%	0 0%	1 100%
Cover crops in Orchards	2 50%	2 50%	4 100%
In Upland fields	2 33%	4 67%	6 100%
Agroforestry Hedges	14 54%	12 46%	26 100%
Alley +	0 0%	12 100%	2 100%
Total	26 3%	53 67%	79 100%

TABLE 22: FARMER WILL CONTINUE TO USE METHODS

	Frequency	Percent
Will use	26	32.9%
Won't use	53	67.1%
TOTAL	79	100.0%

In Table 23 the average of the responses of all the participants, when asked whether conservation farming decreased costs of growing their crops, 51% felt that it decreased costs and 49% felt that it had no effect. With Kod Pa Wai and San Pa Por's high percentage of response indicating that there was a decrease in production costs (71%), leads to a search for a correlation of conservation methods implemented in these two villages. All (upland rice with black bean, rotation) and K10 (leucaena monocropped) had the greatest correlation. When compared with the attitudes in Table 14, it does indicate that participants have a very positive attitude towards the K10 (leucaena monocropped) method and that it has decreased production costs.

TABLE 23: CHANGE IN AGRICULTURAL PRODUCTION COSTS USING CONSERVATION METHODS

	Tan Dok Mai	Ban Den	Kod Pa Wai	Dan Muang	San Pa Por	Total
No decrease	8 67%	5 63%	2 29%	3 43%	2 29%	20 49%
Decrease	4 33%	3 38%	5 71%	4 57%	5 71%	21 51%
Total	12 100%	8 100 %	7 100%	7 100%	7 100%	41 100%

Table 24 shows that 72% of the participants felt that conservation farming increased their family income. A comparison between Table 24 and 25 shows that although there is an increase in family income, there is also an increase in labor input. Perhaps the results seen in Table 26 reveal the reason why 56% of the participants indicated that they will not expand and why 33% (Table 21) of the conservation methods will not be used in the future.

Tan Dok Mai, where 69% said that there was an increase in income with conservation farming methods and only 33% (the lowest amount recorded) perceived an increase in labor input, had the worst attitude toward conservation farming. In other words, although the benefits are clearly shown in the charts, it appears that the participants do not appreciate the benefits they are receiving.

TABLE 24: CHANGE IN FAMILY INCOME WITH CONSERVATION METHODS

	Tan Dok Mai	Ban Den	Kod Pa Wai	Dan Muang	San Pa Por	Total
Decreased	0 0%	0 0%	0 0%	1 14%	1 14%	2 5%
No change	4 31%	1 13%	2 25%	3 43%	0 0%	10 23%
Increased	9 69%	7 88%	6 75%	4 43%	6 86%	31 72%
Total	13 100%	8 100 %	8 100%	7 100%	7 100%	43 100%

TABLE 25: CHANGE IN LABOR INPUT WITH CONSERVATION METHODS

	Tan Dok Mai	Ban Den	Kod Pa Wai	Dan Muang	San Pa Por	Total
Increased	4 3%	5 63%	3 38%	4 57%	3 50%	19 49%
No change	6 50%	1 13%	5 63%	2 29%	3 50%	17 41%
Decreased	2 17%	3 25%	0 0%	1 14%	0 0%	5 12%
Total	12 100%	8 100%	8 100%	7 100%	6 100%	41 100%

A review of the responses for Table 26 showed that there was some confusion about the question regarding whether the farmers are planning to expand using conservation methods. Some farmers thought that meant expansion into more land and answered that they had no more land to expand into. Others understood that the question referred to expansion in the use of conservation methods. Therefore, it is not an accurate reflection when 56% of the participants said that they would not be expanding. For example, in San Pa Por, where 86% of the participants indicated that they are going to expand, there might be a correlation between their positive response and the fact that they are more educated than participants in the other villages and are able to understand the question better.

TABLE 26: FARMER PLANS TO EXPAND USE OF CONSERVATION METHODS

	Tan Dok Mai	Ban Den	Kod Pa Wai	Dan Muang	San Pa Por	Total
Not expand	7 54%	6 75%	5 63%	5 71%	1 14%	24 56%
Will expand	6 46%	2 25%	3 38%	2 29%	6 86%	19 41%
Total	13 100%	8 100 %	8 100%	7 100%	7 100%	43 100%

TABLE 27: NATURE OF PERCEIVED BENEFITS

Nature of Benefit (Drawback)	Frequency	Percent
Fertilizer	37	49.3%
Soil conservation	11	14.7%
Mulch	3	4.0%
Sell seed	4	5.3%
Eating	2	2.7%
Other	12	16.0%
Yield increase	4	5.3%
Crops died	2	2.7%
TOTAL	75	100.0%

E. RECOMMENDATIONS

1. Table 28 shows that 28% of the participants want to continue the same level of involvement with the VES, 70% want more involvement and only 2% (one family) want less involvement. These figures show that the recipients of the program are basically happy with the OFDP. Referring to Tables 13, 14, and 21 will help determine what conservation method to encourage in each locality. It should be noted that method K10 (leucaena monocropped) had a very highly positive response and that the participants who tried that method reported a reduction in production costs.

TABLE 28: FARMER'S DESIRE FOR PROJECT INVOLVEMENT

Village	Want Less	%	Want Same Amount	%	Want More	%
TAN DOK MAI	0	0	9	69	4	100
BAN DEN	1	13	0	0	7	100
KOD PA WAI	0	0	1	13	7	100
DAN MUANG	0	0	1	14	6	100
SAN PA POR	0	0	1	14	6	100
TOTAL	1	2	12	28	30	100

In addition to reference to Tables 13, 14 and 21, it is recommended that the staff of VES should note the following table to find the most appropriate teaching method. In Ban Den and Tan Dok Mai, where the large percent of the participants felt that the conservation methods were not worth sharing, this table can help determine the best method to use with these villagers.

TABLE 29: REQUESTED TEACHING METHODS BY VILLAGE

Village	Audio-Visual	Written	Demonstration	Experimentation
TAN DOK MAI	3	2	3	1
BAN DEN	4	5	7	5
KOD PA WAI	--	--	--	--
DAN MUANG	2	4	2	3
SAN PA POR	--	--	--	--
TOTAL	**9**	**11**	**12**	**9**

See APPENDIX II for tables showing soil preparation, planting, weeding and harvesting by gender. These tables can be useful for future reference when implementing training and looking to establish accurate target groups within the population.

2. When an organic farming method is introduced in a village, it is important to initially demonstrate it correctly and monitor the progress of the demonstration to ensure maximum benefit and long-term success. Although it is appreciated that encouragement of farmers who want to make adaptations and modifications is generally a good idea, in this case, modifications mask the true and full benefits of the organic farming method and have a negative effect on the overall acceptance by the farmer.

3. For farmers who are undecided about the organic farming methods, McKean field staff should demonstrate (at McKean expense), on a section of the farmer's land, model techniques that show the benefits of conservation methods. The produce from that demonstration plot should go to the farmer. Monitoring and record-keeping activities should be performed on a monthly basis.

A demonstration plot which is a good example should be used as a teaching tool to show people from other villages. Incentives can be offered to motivate the owner of the model demonstration plot to keep maintaining his land. At least one demonstration plot should be encouraged in every village to show a broader range of alternative farming techniques on different soil and environmental conditions. In this way, farmers who are undecided can be shown the full range of possibilities.

Once established, frequent study tours involving interested village participants can be organized to coincide with monthly monitoring visits to the villages so that villagers from other locations can personally see what is happening to farmers in the visited villages and share experiences with them.

4. More incentives should be provided for farmers who are willing to try the new organic farming methods. Suggestions for possible incentives that can be used are taking photographs or videos of the farmer and his demonstration to show other villages, providing certificates upon successful completion of various steps towards achieving full success in organic farming techniques, or using successful farmers to be trainers in study tours and training sessions.

5. For those individuals who want more immediate feedback from organic farming methods or who are discouraged because they do not see any benefits of these methods, organic kitchen vegetable gardens on small plots will provide an example of the benefits of organic farming with less labor and effort. In addition, the health of the family will benefit from eating chemical-free food. These small vegetable gardens can also be used as introductory demonstrations of organic farming for new participants. Note the following tables to see where to initiate these ideas. These tables can also be used during future follow-up as a comparison to see whether their attitudes have changed toward the project. For names of individual families who are receptive to trying these new ideas, see the compilations of the interview forms that are supplied by the PRDI but not presented as part of this evaluation.

TABLE 30: FARMER HAS KITCHEN GARDEN

Village	None	%	Have	%	Total	%
TAN DOK MAI	4	13	9	69	13	100
BAN DEN	3	38	5	63	8	100
KOD PA WAI	2	25	6	75	8	100
DAN MUANG	2	29	5	71	7	100
SAN PA POR	2	29	5	71	7	100
TOTAL	**13**	**30**	**30**	**70**	**43**	**100**

TABLE 31: FARMER WANTS TO CHANGE KITCHEN GARDEN

Village	Will Not Change	%	Will Change	%	Total	%
TAN DOK MAI	7	70	3	30	10	100
BAN DEN	3	50	3	50	6	100
KOD PA WAI	2	33	4	67	6	100
DAN MUANG	3	60	2	40	5	100
SAN PA POR	3	50	3	50	6	100
TOTAL	**18**	**55**	**15**	**45**	**33**	**100**

III. THE ALTERNATIVE CROP PROTECTION PROJECT

The Alternative Crop Protection Project sets up demonstration and observation projects, in combination with an information program, to improve the cropping patterns and methods by utilizing legume crops. The following information about the objectives, activities and project area was taken from the draft of "Alternative Agriculture", January 1989.

A. OBJECTIVES OF THE PROJECT

1. Improvement and development of techniques and utilization of insecticidal plants to control agricultural crop and storage pests.
2. Promotion of increased awareness among farmers and gardeners on ecologically sound production methods.
3. To improve the knowledge of preparation, application and effectiveness of botanically derived pesticides.
4. To disseminate utilization of insecticidal plants as part of integrated pest management to farmers, extension agents and development personnel.
5. To reduce hazards for health and environment.
6. To reduce costs and dependency on chemical based pest management.
7. To integrate scientific information and resource persons from scientific institutions into this farmer oriented experimentation on insecticidal plants.

B. ACTIVITIES OF THE PROJECT

Phase I - Preparation:

--assessment of resource persons and information available in Thailand or on different levels (scientific to farmers)
--delineate experimental target area
--survey in target area
--interpretation of survey to define:
-prevalent pest problems in target area
-plant species for experimentation
-experimentation sites and participants
-layout of experimentation plan

Phase II - Experimentation:

--trials (pretesting)
--multi-location trials (main-testing)

Phase III - Evaluation:

--dynamic evaluation
--main evaluation

Phase IV - Dissemination:

--production of technical media
--workshops for farmers, village workers, multiplicators
--communication and cooperation with other activities in non-chemical agriculture for strengthening the agro-ecology movement in Thailand contributing to already existing newsletters in keep participants and other interested people informed

C. PROJECT AREA

The ACPP is working in the northern, central and northeastern provinces of Thailand. Villages visited were:

1. Ban Den
2. Kod Pa Wai
3. Dan Muang
4. San Pa Por

The ACPP is also working in cooperation with the Appropriate Technology Association (ATA) in Bangkok.

D. STATISTICAL DATA

The information on the ACPP will be presented separately for each village (see APPENDIX VII) to clarify the experiments performed in each area. These are a compilation of the data obtained from the questionnaires, with special emphasis on materials that is beneficial to the staff of the ACPP and ATA (Bangkok) to compare

results with those gathered from other project areas. This data, combined with ATA data, would give a more accurate picture of attitudes of the participants and benefits of the program.

General Pattern of Chemical Use

The chemicals used in all five villages are listed so that both OFDP and ACPP staff can refer to them for future project implementation or expansion.

TABLE 32: CHEMICALS USED BY VILLAGE

	Tan Dok Mai	Ban Den	Kod Pa Wai	Dan Muang	San Pa Por	Total
Urea	2 16.7%	0 0%	0 0%	1 20%	0 0%	3 7.9%
Grammaxone	2 16.7%	1 33.3%	0 0%	0 0%	6 37.5%	9 23.7%
Hormone	2 16.7%	0 0%	0 0%	0 0%	0 0%	2 5.3%
Insecticide	2 16.7%	0 0%	0 0%	0 0%	0 0%	2 5.3%
Fungicide	1 8.3%	0 0%	0 0%	0 0%	0 0%	1 2.6%
Manure	1 8.3%	0 0%	0 0%	0 0%	0 0%	1 2.6%
6-20-0	1 8.3%	0 0%	0 0%	0 0%	0 0%	1 2.6%
15-15-15	0 0%	1 33.3%	0 0%	0 0%	0 0%	1 2.6%
46-0-0	0 0%	0 0%	0 0%	2 40%	2 12.5%	4 10.5%
16-20-0	0 0%	0 0%	0 0%	1 20%	0 0%	1 2.6%
14-14-21	0 0%	0 0%	0 0%	0 0%	1 6.3%	1 2.6%
13-13-21	0 0%	0 0%	0 0%	0 0%	2 12.5%	1 2.6%
21-0-0	0 0%	0 0%	0 0%	0 0%	1 6.3%	1 2.6%
Asudin	0 0%	0 0%	0 0%	0 0%	1 6.3%	1 2.6%
Do 2E	0 0%	0 0%	0 0%	0 0%	0 0%	1 2.6%
Curidon	0 0%	0 0%	1 50%	0 0%	0 0%	1 2.6%
Furidon	0 0%	1 33.3%	1 50%	0 0%	2 12.5%	4 10.5%
Other 1	1 8.3%	0 0%	1 50%	0 0%	0 0%	1 2.6%
Other 2	0 0%	0 0%	0 0%	1 20%	0 0%	1 2.6%
Total	12 100%	3 100%	2 100%	5 100%	16 100%	38 100%

TABLE 33: TYPE OF FERTILIZER/PESTICIDE USED BY CROP

	Upland rice	Corn	Mango	Orange	Soybean	Peanut	Ginger	Alinia	Coffee	Total
Urea	1 33%	0 0%	2 22%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 8%
Gram maxone	0 0%	6 43%	1 11%	1 33%	0 0%	1 50%	0 0%	0 0%	0 0%	9 24%
Hormone	0 0%	0 0%	2 22%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 5%
Insecticide	0 0%	0 0%	1 11%	0 0%	1 33%	0 0%	0 0%	0 0%	0 0%	2 5%
Fungicide	0 0%	0 0%	1 11%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 3%
Manure	0 0%	0 0%	1 11%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 3%
6-20-0	0 0%	0 0%	1 11%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 3%
15-15-15	0 0%	0 0%	0 0%	1 33%	0 0%	0 0%	0 0%	0 0%	0 0%	1 3%
46-0-0	0 0%	2 29%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	4 11%
16-20-0	1 33%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 3%
14-14-21	0 0%	1 7%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 3%
13-13-21	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 100%	0 0%	1 50%	2 5%
21-0-0	0 0%	1 7%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 3%
Asudin	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 50%	1 3%
Do 2E	0 0%	1 7%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 3%
Curidon	0 0%	0 0%	0 0%	0 0%	1 33%	0 0%	0 0%	0 0%	0 0%	1 3%
Furidon	1 33%	0 0%	0 0%	1 3%	1 33%	1 50%	0 0%	0 0%	0 0%	4 11%
Other 1	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 100%	0 0%	1 3%
Other 2	0 0%	1 7%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 3%
Total	3 100%	14 100%	9 100%	3 100%	3 100%	2 100%	1 100%	1 100%	2 100%	38 100%

TABLE 34: COST CHANGE OF CHEMICALS SINCE LAST YEAR BY VILLAGE

Village	Increased	%	Same	%	Reduced	%	Total	%
TAN DOK MAI	3	17	7	44	2	50	12	32
BAN DEN	1	6	2	13	0	0	3	8
KOD PA WAI	1	6	1	6	0	0	2	5
DAN MUANG	4	22	0	0	1	25	5	13
SAN PA POR	9	50	6	38	1	25	16	42
TOTAL	**18**	**100**	**16**	**100**	**4**	**100**	**38**	**100**

TABLE 35: COST CHANGE OF CHEMICALS SINCE FIVE YEARS AGO BY VILLAGE

Village	Increased	%	Same	%	Reduced	%	Total	%
TAN DOK MAI	5	19	5	50	2	100	12	32
BAN DEN	1	4	2	20	0	0	3	8
KOD PA WAI	1	4	1	10	0	0	2	5
DAN MUANG	5	19	0	0	0	0	5	13
SAN PA POR	14	54	2	20	0	0	16	42
TOTAL	**26**	**100**	**10**	**100**	**2**	**100**	**38**	**100**

See APPENDIX IV for more detailed information regarding Tables 34 and 35.

TABLE 36: PATTERN OF CHEMICAL USE BY NUMBER OF FAMILIES IN VILLAGE

Village	This year	Last year	5 years ago
TAN DOK MAI	3	4	2
BAN DEN	2	1	1
KOD PA WAI	2	1	1
DAN MUANG	4	1	0
SAN PA POR	6	4	4
TOTAL	**17**	**11**	**8**

See APPENDIX IV for more detailed information regarding the types of chemicals used.

E. RECOMMENDATIONS

1. By looking at Table 36, a definite increase of chemical use is noted, particularly in areas where income is higher, such as San Pa Por and Dan Muang. It is recommended that more effort is concentrated in areas where the agricultural income is high.

2. More intervention, explanation and monitoring needs to occur to ensure the success of this project. Farmers seem to be confused and do not realize what benefits to expect from trying the new methods.

3. Farmers interest can be motivated by more dramatic presentation (verbal or audio-visual) of the harmful effects of the misuse or long-term overuse of chemicals.

4. Before setting up a demonstration, farmers should show interest and motivation and have a good understanding and knowledge of the project and the expected results. With a knowledge of what to expect, the farmer can give more

accurate feedback to the project in regards to which methods are most effective. Accurate feedback and monitoring is essential to the success of the project.

5. The majority of villagers in all villages wanted additional project involvement, and none recommended decreased involvement as shown in Table 37.

TABLE 37: FARMERS' DESIRE FOR PROJECT INVOLVEMENT

Village	Want Less	%	Want Same Amount	%	Want More	%	Total	%
BAN DEN	0	13	1	12	7	88	8	100
KOD PA WAI	0	0	0	0	4	100	4	100
DAN MUANG	0	0	1	20	4	80	5	100
SAN PA POR	0	0	1	33	2	67	3	100
TOTAL	0	2	3	15	17	85	20	100

IV. SUMMARY AND RECOMMENDATIONS

A. VILLAGE EXTENSION SERVICE ADMINISTRATION

1. The ability of the field staff to interact and motivate the villagers seemed to be excellent. A more regular and coordinated visitation pattern would benefit the project.

2. More extensive and comprehensive record keeping by field staff would allow better analysis of project activities and thus increased project effectiveness.

B. GENERAL RECOMMENDATIONS

1. Coordination with other development projects or agencies would benefit not only the work of the VES but would disseminate information about its programs to a larger population. This type of coordination would depend on good establishment of demonstration plots and motivated trainers.

2. Concentration on an integrated model village program would greatly enhance the acceptance of the people viewing the demonstrations of the VES. Well recorded "before" and "after" statistics in a economically depressed area would more dramatically demonstrate the effectiveness of the project.

3. Better records of exactly what a farmer did to implement an activity would enhance the follow-up of a project.

4. Some farmers undertake so many activities that they can't keep them straight.

5. Teach farmers to measure results (i.e., doing crop cuts on measured plots to calculate yields).