THE TRAINING AND VISIT AGRICULTURAL EXTENSION PROGRAMME IN MATARA DISTRICT: AN EVALUATION

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AGRARIAN RESEARCH AND TRAINING INSTITUTE

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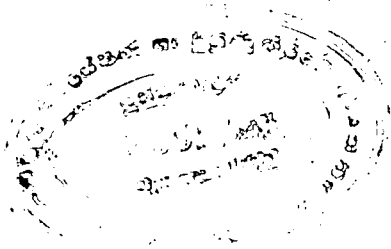

ARTI/Wageningen University
Research Project in Agricultural Planning

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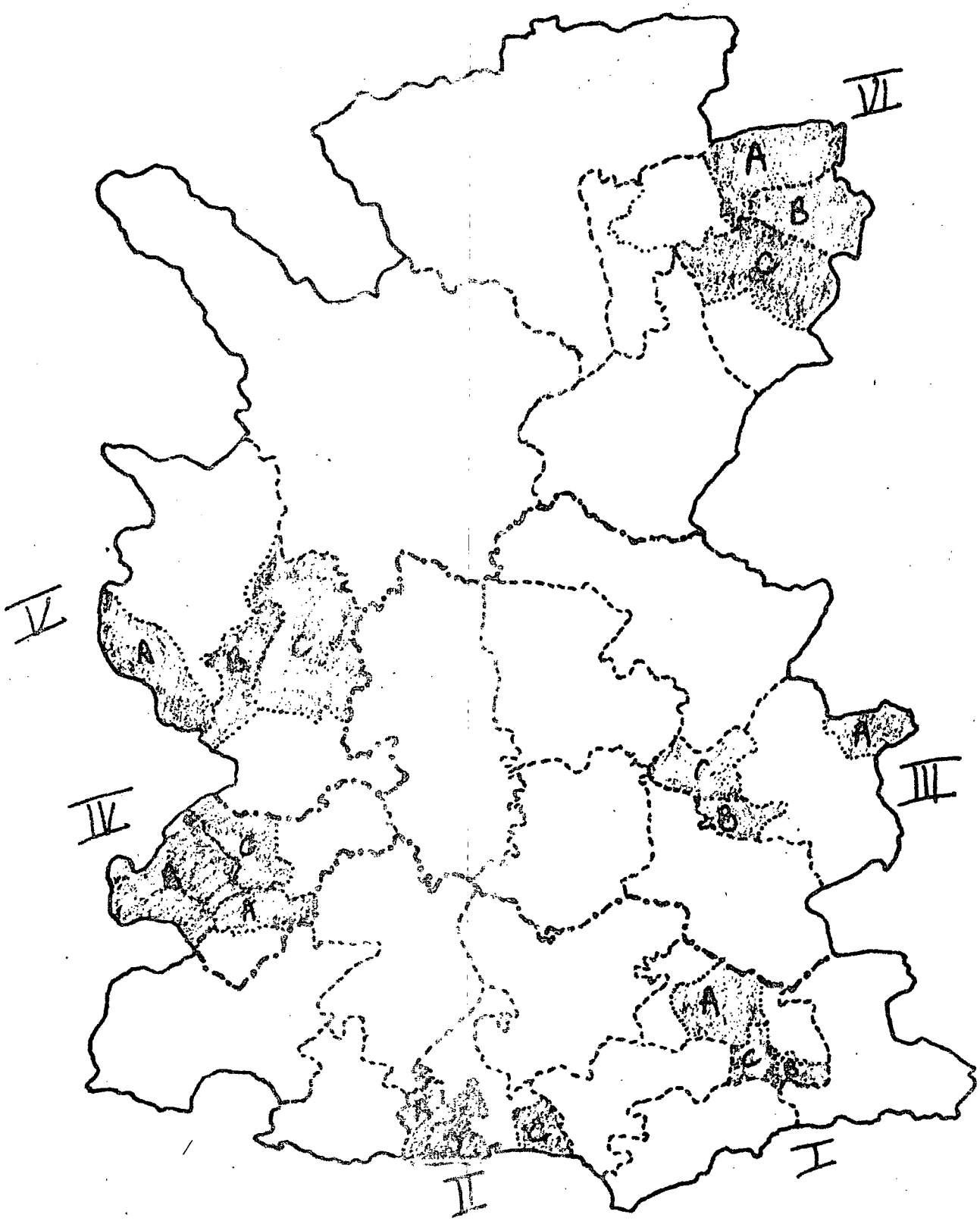
FOREWORD

Responsibility for the research on which the present report is based was entrusted to the ARTI/Wageningen University Research Project in Agricultural Planning by the Ministry of Plan Implementation. This decision to investigate how the Training and Visit system of Agricultural extension was operating in our district had grown out of concern at the cost-effectiveness of investment in this type of development activity.

Senior officials involved in extension were uncertain as to the efficacy of T&V in Wet Zone areas of the country. ARTI had already carried out a study of the new extension methodology as it was being applied in the context of the Kurunegala Integrated Rural Development Project (Occasional Publication No. 26). It was felt that a complementary research effort might thus be appropriate in Matara district, where a somewhat different approach to regional development planning had been adopted. Data was collected in the field over a period of four weeks.

The authors of this report are M.Sc. students, who were attached to the ARTI/Wageningen University Project. Writing-up of research results and preparation of their text for duplication took place in Holland. It is for this reason that the presentation and the terminology used are occasionally at some small difference with the norms usually observed in the Institute's publications. The precise meaning given to the terms 'monitoring' and 'evaluation' is a case in point. Any doubt that may subsist as to the exact definitions intended is however resolved in Chapter Three.

Matara District : see pages 7 and 8



-·-·- Agro-Ecological zone boundary

- - - - - - - AI-division boundary

..... KVS-region boundary

CONTENTS

Abbreviations:

AEO (called AI in Matara)	Agricultural Extension Officer
AI	Agricultural Instructor
AO	Agricultural Officer
ASC	Agrarian Service Centre
CF	Contact Farmer
DA	Department of Agriculture
DEO	District Extension Officer
FF	Follower Farmer
KVS	Kushikarma Viapthi Sevaka
SDEO (AO)	Sub Divisional Extension Officer
SMS	Subject Matter Specialist
T&V	Training and Visit
VEW (KVS)	Village Extension Worker

CHAPTER 1

THE TRAINING AND VISIT EXTENSION MODEL

The Training and Visit (T&V) system of Agricultural Extension has been developed by Daniel Benor and has been introduced in projects assisted by the World Bank in a number of countries.
The first and third chapters of this report are derived from the following two books which describe the T&V Extension Model in detail;

-Agricultural Extension The Training and Visit System
by: Daniel Benor and James Q. Harrison
-A System for Monitoring and Evaluating Agricultural Extension Projects
World Bank Staff Working Paper No. 272
prepared by: Michael M. Cernea and Benjamin J. Tepping

The method of operation of the T&V System is to concentrate its initial efforts only on the major crops and on those few aspects of farmer's production which offer greatest scope for increasing yields through relatively unsophisticated techniques of better crop husbandry.
These techniques often call for little or no increase in cash inputs, for the focus is on the improvement of basic agricultural practices which require more work but little cash.
The recommendations are conveyed mainly to selected and imitable contact farmers who will assist in spreading the new practices to other farmers in the area quickly.
The regularity and strict fortnightly periodicity of VEW's contacts with farmers allows a high divisibility of the message. This helps to ensure that recommendations are area specific and appropriately timed for a given interval.

The general organizational structure of the T&V System is based on the total number of farm families to be assisted in a given area and on defining the number of families which one VEW can reasonably be expected to cover.

The VEW's are trained, guided in the field and supervised by the AEO who, in turn, are guided and supervised by SDEO's themselves supported by SMS's.
The DEO is responsible for the service at district level and, depending on number and type of districts, he is supervised either directly by extension headquarters or by an intermediate superior
The organizational principle involved is to ensure that the distance between the levels of the service is small enough to afford close personal guidance and supervision of the level immediately below.

Conditions for a successful implementation of T&V are:
-Establishing a single line of orders, regulations from the governmental agencies responsible for agriculture to the field level extension worker. This agency should have full administrative control of the extension services.
-All agricultural extension services should be combined into a unified extension service. Any staff engaged in special crops should be integrated within the regular staff.
-Extension personnel should be full time professionals devoting all their time to agricultural extension work.
-The extension work needs to be organised in a systematic, time bound programme of training VEW's and visits to CF's.
-The VEW is expected to provide information and advice only to a few selected CF's instead of reaching all farmers in earlier extension systems.

CHAPTER 2

THE ORGANIZATIONAL STRUCTURE OF THE T&V SYSTEM AS IT IS IMPLEMENTED IN MATARA DISTRICT

The agency responsible for the functioning of the T&V system in Matara is the Department of Agriculture. The extension staff of the department is composed as follows:

-the Assistant Director of Agriculture (ADA), who heads the department
-3 Agricultural Officers (AO) also stationed at the department
-6 itinerant Subject Matter Specialists ('SMS) who give lectures at the fortnightly training sessions and also keep in touch with the research stations and the University of Peradenya (Kandy)
-21 Agricultural Instructors (AI) who have their headquarters at the ASC of their division
-120 Villagelevel Extension Workers (KVS) living in their KVS-regions.

The district has been divided into three zones:

-High potential paddy zone (Kamburupitya) ; 7 AI-divisions
-Mid potential paddy zone (Hill country) ; 5 AI-divisions
-Low potential paddy zone (Coastal area) ; 9 AI-divisions

Each zone is headed by one AO. Each AI supervises about six KVS's, the number depending on the number of farm families within their area and on the distance between the plots the KVS has to visit.
The AI is guided and supported by the SMS's on the fortnightly training sessions. Here the SMS's give their message to the AI's and KVS's and reversely gather information about the problems in the field.
Each KVS covers about thirtysix CF's, the latter receiving a visit from the KVS every fortnight. The KVS can visit about six CF's a day, therefore three days a week are reserved for fieldvisits. These visits take place according to an exact time table, the idea being that the farmers would know precisely when they might expect the KVS.

Every fortnight a training session is held by the six SMS's for the AI's and the KVS's together.
For the Hill country zone the training session is held at the ASC in Morawaka. For the Kamburupitya zone the training session is held at the ASC's in Wilpita and in Hakmana. For the Coastal zone the training session is held at the Department of Agriculture in Matara town.

The training classes last for about four hours during which six different subjects are treated by their respective SMS's, namely:
-paddy cultivation
-farm machinery
-extension methodology
-home gardening
-horticulture
-plant protection

CHAPTER 3

MONITORING AND EVALUATION

Monitoring and evaluation are closely related. Monitoring implies keeping track of project activities and progress. It provides current information for project management and also a basis for on-going and ex-post evaluation (assessment of project impact and overall results).
Monitoring during a project and evaluation during and after the project provide management information by means of a dynamic analysis.

Monitoring, more specifically, is the gathering of information on utilization of project inputs, on unfolding of project activities, on timely generation of project outputs and on circumstances that are critical to the effective implementation of the project.
This information arising during the course of implementation enables project management to redirect, if necessary, implementation towards a more efficient achievement of project goals and effects.

On-going evaluation is a dynamic analysis of project effects and impact, to be carried out during implementation. It is designed to suggest solutions to problems of project execution, some of which may have been identified as a result of monitoring. A major objective is to make an in-dept assessment, before project completion, of whether the project's defined target group is getting the benefits of various components as these are implemented in line with the assumptions underlying project design. On-going evaluation is also necessary for management and policy makers to adapt the project to changing objectives and circumstances or to a better conception of the sociological environment. Thus on-going evaluation would deeper the efforts of monitoring, working towards bringing the project to fully effective operation.

Ex-post evaluation would resume this effort several years after completion of the investment, to review comprehensively the experience and impact of

a project as a basis for further policy formulation and project design.

The present report is the result of four weeks of fieldwork; it must be seen as a monitoring effort. The fact that the T&V Extension Programme had been implemented in the Matara district since one and a half year makes it impossible to establish the impact of the programme in this phase.

Our main effort has been concentrated on 1) the selection of the CF's, 2) the visits made by the KVS's to the CF's and 3) the adoption and transmission of the recommendations done by the KVS's.
The selection of the CF's is usually among the first things undertaken by the KVS's when they arrive at their assigned areas; it is of crucial importance to the success of the extension operation.
The functioning of the T&V system is not only expressed by the quality of the message and the form and speed with which it is passed down to the farmers but also by the extent to which the farmers can present problems encountered during cultivation to the KVS to be solved at a higher level.
The visit of the KVS is thought to be the final output of all means put in place; research, training, army of field staff and specialists.
Therefore the enthusiasm and motivation with which the KVS's perform this task and the number of FF's present at the visit strongly determine the functioning of the T&V system.

CHAPTER 4

METHODOLOGY AND SET UP OF THE SURVEY

Our description of the organizational stucture and functioning of the T&V Extension Programme as it is implemented in Matara is based on discussions with the Assistant Director of Agriculture, the Agricultural Officers, a number of Subject Matter Specialists and subsequent interviews with AI's, KVS's, CF's and FF's.

In the course of four weeks of fieldwork we attended a training session at the ASC of Hakmana, a Harvest Fieldday in Kerinde and several KVS visits to CF's.

For our interviews with the AI's, KVS's, CF's and FF's we decided upon the following distribution of the sample:

-in each of the three Agro-Ecological zones 2 AI's were to be selected,
-per AI 3 KVS's would be randomly selected
-per KVS 2 CF's " " " "
-per CF 2 FF's " " " "

Therefore in all 6 AI's, 18 KVS's, 36 CF's and 72 FF's; adding up to 132 persons were to be interviewed.

We selected the following AI-divisions and KVS-regions:

AO-zone	AI-division	KVS-region
Coastal area	I Dandeniya	A Uda-Apareka
		B Babarenda
		C Tarala
	II Madiha Godagama	A Hithatiya
		B Gandara Goda
		C Kanatha Goda
Kamburupitya	III Hakmana	A Pananwela Miyella
		B Kongela
		C Naranwelpita

AO-zone	AI-division	KVS-region continued.
Kamburupitya continued	IV Kanake	A Penetiyana
		B Wahala Kanake
		C Poraba Kanake
Hill country	V Akuressa	A Maliduwa
		B Aremudugoda
		C Marambe
	VI Urubokka	A Katawala
		B Ginnaliya
		C Urubokka

Questionnaires were drafted and prestested in the AI-divisions of Kekennadura and Mirissa in the Coastal area after which they were modified and multiplied in their definite form. (see Annex I).

In the course of our survey the initial set-up was slightly altered as a result of some of our findings. The interviews of the CF's, especially in Urubokka, were very disappointing in a number of cases with respect to the fact that the CF's were not actually Contact Farmers with a group of Follower Farmers they were to represent. As a result FF's were not to be found and we decided to interview an extra number of CF's to get a representative view of the AI-division involved.
In Madiha Godagama we were unable to interview the AI due to illness.
The result was that we ended up with the following sample: 5 AI's, 18 KVS's, 41 CF's and 62 FF's; 126 interviews altogether.

The survey was carried out by two persons, both assisted by an interpreter. One team interviewed all AI's, KVS's, CF's and FF's in the odd-numbered AI-divisions, the other team worked in the even-numbered AIdivisions.
When working out the results of the survey it turned out that the interviews which were made in the odd-numbered divisions offer a much more favourable impression of T&V than those made in the even-numbered AI-divisions.
Two explanations can be advanced for this phenomenon:
- A look at the map (p.ii) will show that AI-divisions II and VI are both located at extremes of the district.
AI-division II; Madiha Godagama is located in the most densely populated part of Matara, close to Matara Town while AI-division VI; Urubokka is located in the much more sparsely populated Hill country.
It is not unreasonable to assume, as in fact our findings bore out, that

in these areas the T&V Extension Programme has more difficulties to establish itself and function according to plan than in the Kamburupitya area (AI-divisions III and IV). As it happened AI-divisions I and V are less extremely located so that it is not astonishing that our findings there present a more balanced picture as they have in Kamburupitya.

- Another explanation may be a bias with one or both interviewers. Such an effect can even have been amplified by the interpreter for whom it is difficult to objectively translate questions and aswers.

Whatever may have been the reason for this phenomenon we have tried not to let it hinder us in giving an evenhanded report of the questionnaires in the next chapter.

CHAPTER 5

DISCUSSION OF THE QUESTIONNAIRES

In monitoring the T&V Extension Programme in Matara we concentrated our efforts on three aspects: -the selection of the Contact Farmer
-the visit made by the KVS to the CF
-the degree to which the recommended practices are adopted and transmitted to the farmers.

The discussion of the results of our inquiry is preceded by a short description of the timeschedules of the AI and the KVS.

5.1 AI

Having randomly selected two AI-divisions in each of the three Agro-Ecological Zones headed by an Agricultural Officer, our first visit was to the selected Agricultural Instructors.
Due to illness of the AI in Madiha Godagama a total of five AI's were interviewed.

Our interview consisted of completing the Questionnaire (see Annex I), making a list of KVS's from which three were to be randomly selected and generally discussing the T&V Extension Programme. The results of these interviews are presented below.

All five AI's hold a diploma of a two year course of Agricultural Training. Three attended the Agricultural Training Institute of Kundasala (Kandy), one went to Hardy and one to Galle.
All AI's were more or less familiar with the agricultural practices in this part of Sri Lanka; three are originally from Matara, the other two come from Galle.

Table 5.1 presents the number of KVS, CF and FF whom the AI supervises.

Table 5.1 : Number of KVS, CF and FF per AI-division.

AI-division	I	II	III	IV	V	VI
1) number of KVS	6+1[a]	3	5+1	4	9+1	4+1[b]
2) number of CF	196	108	180	120	324	125
3) number of FF	4102	4663	4050	2726	7112	4583
4) number of CF per KVS[c] (2÷1)	33	36	36	30	36	31
5) number of FF per KVS (3÷1)	684	1554	180	681	790	763[d]
6) number of FF per CF (3÷2)	21	43	23	23	22	37

a) 6+1 signifies: 6 KVS's in the field + 1 KVS at the office

b) soon to be 6+1; 2 KVS-regions now vacant

c) Per KVS in the field

d) excluding vacant KVS-regions

A typical AI timeschedule reflects the fortnightly periodicity that is found throughout the T&V Extension Programme.
Every monday the AI meets with the KVS's in his office at the ASC. This conference can be used to refreshen the messages of the last training session and to adapt them to local needs if necessary.
Another topic for discussion are the problems the KVS's may have encountered in the field. In case the AI and the KVS's are not able to come up with a solution to the problem it is put forward at the next training session.
Three of the four days from tuesday through friday are taken up by field visits to CF and FF, usually in the company of one of the KVS's. One day of these four is spent at the fortnightly training session. In the week no training session is held it is used to catch up on office work, for visits to demonstration plots or for a meeting at the ADA in Matara. Saturdays may be used for the same purpose or to visit a farmer who wasn't found at home during an earlier attempt.

Most AI's claimed not to have been confronted with serious problems recently. Those that were presented by the KVS's they were able to solve themselves or with the help of a SMS.

From the above outline of an AI's timeschedule it is obvious that a days work may entail quite some travelling. Two of the AI's have a bicycle at their disposal, the other three walked or travelled by bus. One AI complained about the allowance he received for transport. This complaint was to be often repeated by the KVS's we interviewed.

For six days each fortnight the AI is in close contact with both the KVS's and the farmers. This is a mechanism for self-evaluation purposely built into the T&V Extension System. Our subsequent findings from talks with KVS's and farmers were to make us wonder seriously whether all AI's take full advantage of this possibility. We will return to this issue later in the report.

5.2 KVS

At each AI-office we were provided with a list of KVS's from which we randomly selected four; three to be visited and one to be held in reserve. We therefore interviewed eighteen KVS's, six female and twelve male. All but one of them were educated to the same level; primary and secondary scholing supplemented by one year of Farm Training School. The exception attended two years of Farm Training School.
Seven KVS's are from Matara District, two come from the neighbouring district of Galle and one from Ratnapura. The remaining eight hail from other parts of Sri Lanka.

For the majority of KVS's the fact that their work forced them to leave their home and live in the environs of their KVS-region posed considerable problems.

The KVS's mentioned the following means of transportation for their field visits:

walking	13	times
pushbike (bicycle)	11	"
bus	6	"

For two of them walking was the only means of transportation.

The number of CF and FF said to be reached by the KVS's are presented in table 5.2. The figures are in approximate concurrence with those presented by the AI's.

Table 5.2 : Number of CF and FF per KVS-region.

AI-division	I	II	III	IV	V	VI
average number of CF	36	36	36	30	36	34
" " " FF	625	1550	665	650	8000	785

Most KVS's mentioned paddy, vegetables and homegardens as the most important crops about which they provided extension. Coconut and Cinnamon were mentioned occasionaly and Livestock once.

The timeschedule of the KVS is similar to that of the AI:
Monday is reserved for meeting with the other KVS's and the AI as described earlier. Three of the four days from tuesday through friday are used to visit the CF's. By visiting six a day the KVS is able to complete his round of thirtysix CF's every two weeks. One of the four days is used for the training session the one week and for visiting farmers missed at an earlier occasion the other week. The saturday is often used to instruct Young Farmers Associations, to visit demonstration plots or as a day on which farmers can drop in to consult the KVS.

5.3 The Training Session.

By means of the fortnightly training session the AI's and KVS's are kept abreast of new research findings by the SMS's who each deliver a lecture on their subject.
In their turn the AI's and KVS's present the problems they came across for discussion with their colleagues and the SMS's.
The KVS's are then instructed in the three or four recommendations for the forthcoming two weeks of the crop season.

In Matara District the training sessions are held at four different places. In Morawaka for the Northern Region, in Hakmana and Wilpita for the Middle Region and in Matara Town for the Southern Region. Attendance of the training sessions is considered to be satisfactory by the Department of Agriculture. Of the KVS's we interviewed twelve claimed not to have missed a single session during the last Maha season (for the purpose of our interview considered as a period of six months: appr. oct. '80-march '81), four of them missed one session, one missed five sessions and one of the KVS's didn't attend more than one session. In all cases the reason for the omission were acceptable to the AI. The KVS who has missed a training session is always brought up to date by a colleague or the AI.

To elicit the KVS's opinion about the training session we posed them five questions. It proved rather difficult to tempt the KVS's to make definite statements on any of the topics which we raised with the exception of the item 'breaks'. This reluctance must probably be attributed as much to an understandable bashfulness to coment upon their superiors as to the fact

that our discussions were held with the aid of interpreters.

Our first question dealt with the time spent on other crops than paddy during the training sessions. Ten KVS's were of the opinion that crops other than paddy received enough attention at the training to enable them to answer the farmers questions. The eight KVS's who would like more time spent on other crops usually mentioned coconut, tea and rubber. Not surprisingly five of those eight KVS's came from the Northern Region and three from the Southern Region, both areas in which paddy is not as predominant as in the High Potential Zone (Kamburupitiya).

It proved very difficult to explain the concept 'Extension Methods' to the KVS's. What we meant to inquire about was whether the KVS's were satisfied with the training they received in how to convey a message to the farmers. The KVS's however interpreted 'Extension Methods" in the narrower sense of how to approach the farmers in the first place. We were unable to convey our intention but learned that all KVS's approach their CF tactfully by taking out enough time for drinking tea, small talk etc.

Upon being asked the KVS's generally complained about a lack of leaflets and other demonstration aids. The KVS's are of the opinion that there are too few demonstration plots and that demonstrations should not only deal with fertilizer but also with seed varieties and weed control. Several KVS's recounted discouraging experiences where fertilizer did not arrive in time resulting in demotivating the interested farmers or of a lack of interest by officials which was considered dispiriting to the KVS's.

None of the KVS's complained of not being able to solve problems presented by the farmers. Problems that are brought up are first discussed among the KVS and the AI. They are usually able to arrive at a solution, if not the problem can be presented to a SMS at the training session. Even if the problem has been solved it is presented at the training session if it is thought to be instructive to the other AI's and KVS's.

In enquiring after the breaks at the training session we broached a topic about which the KVS's were unanimous. The ASC's where the training sessions are held are too remote from a town or boutique to enable the KVS's to go there for tea or for lunch, while at the ASC itself facilities to make tea are inadequate.

5.4 Selection of Contact Farmers

In the literature on T&V the visit made by the KVS to the (contact)farmer is often stressed as being the single most important moment of the whole endeavour. "The visit...crystallizes and concentrates in a nutshell the whole effort of the entire extension apparatus"[1] and "(it) is the final output of all means put in place."[2]
On the other hand the KVS must "focus his efforts on the contact farmers not to help only these farmers but to convince all farmers in the group of what everyone can achieve."[3]
To arrive at this result the CF must not be too progressive or too slow in adopting new methods, he must be respected by the other farmers and must be prepared to have other farmers visit his fields.
Taking the above into account we consider a careful selection of the CF to be at least as important as an appropriate visit.

The present policy of the ADA Matara in selecting CF is to convene an assembley of the Farmers Group and ask them to elect the CF(!s) from among the group.
In the past the KVS's have taken the easier course of designating the CF's themselves. This method has yielded unsatisfactory results.

Table 5.3 presents the answers to the question: 'Why were you selected as a Contact Farmer?'

Table 5.3 : CF's selected/elected.

AI-division	I	II	III	IV	V	VI	total
elected	4	-	4	-	3	-	11
don't know	1	2	-	2	-	7	12
reason alleged	1	5	2	4	3	3	18
							41

The CF who declared to be elected were elected in a meeting convened by the KVS. They were either nominated by the KVS or by a menber of the group. The elected farmers describe themselves as keen farmers who do more work and produce higher yields than their fellow farmers.

1) A System for Monitoring and Evaluating Agricultural Extension projects p. 19
2) Ibid.
3) Agricultural Extension The Training and Visit System p. 14

The CF who answered that they didn't know why they were selected were usually approached by the KVS between one and two years ago and asked whether they would like to be a CF. In some instances they were merely told that from now on they would be a CF. Especially in Urubokka many CF's do not remember having been told about either the set up of the T&V Extension Programme or of the fact that they are supposed to propagate the cultivation practices they learn to the FF. To our dismay three CF professed not to be aware of the fact that they played any part at all in an Extension Programme. One of these farmers had even been presented to us by the KVS as the best of his CF.

In those instances where the CF could think of some reason why he had been selected it was usually because he had held a position in an agricultural organisation e.g. as a secretary or treasurer of the Govi Karaka Saba or of the Rural Development Society.
Some CF were appointed because their land was selected for a demonstration plot or because their plot was well kept.
In Madiha Godagama some CF appeared to have been very carelessly selected. One was a Railway engine driver who pointed out that he couldn't bother to visit FF's or have them present at his house. Another CF, selected by the same KVS, was a businessman who didn't know the first thing about farming and never personally engaged in cultivating his land. When asked to name some of his FF they turned out to be business connections none of whom tilled his own land. The above mentioned two 'farmers' are eminently unsuitable as CF, it is to be regretted that they were not replaced long ago.

Useing a few very rough indicators we have tried to make a crude selection between the CF's as either suitabale or unsuitable.
The indicators we used were: -age of the CF, -the fact whether he was elected or selected, -his number of FF's, -the acreage of his fields, -the fact whether farming is his main occupation or not and -the fact whether or not he recommended less than three of the four recommended cultivation practices for paddy to his FF's.
This 'test' must of course be regarded with the greatest reserve but we feel that the fact that twentythree CF's scored 'unsuitable' indicates that some reflection on this matter is warranted.

Table 5.4 : Distribution of suitable and unsuitable CF's.

AI-division	I	II	III	IV	V	VI	total
suitable	5	2	3	1	6	1	18
unsuitable	1	5	3	5	-	9	23
							41

5.5 The visit.

As we set forth in the previous paragraph the visit of the KVS is of great importance within the T&V Extension Programme. Moreover the regularity and strict fortnightly periodicity of the visit is thought to be one of the pillars of the T&V Extension Method.

In Matara this necessary regularity is not attained.
We asked the KVS's whether they succeed in completing their round of visits every fortnight. Eleven out of eighteen KVS's answered affirmatively. The CF's were thereupon asked how often a month they were visited by the KVS and whether this visit is usually on the same day of the week. The results are presented below.

Table 5.5 : Regularity of the KVS-visit.

AI-division		I	II	III	IV	V	VI	total
KVS completion of round of visits	yes:	3	2	3	-	3	-	11
	no:	-	1	-	3	-	3	7
								18 KVS's
number of visits per month indicated by the CF's		≥2	2	≥2	1.5	≥2	1	
same day	yes:	5	3	3	1	2	1	15
	no:	1	4	3	5	4	9	26
								41 CF's

In our opinion some KVS's think rather too lightly of the necessity of making regular visits. In discussing this matter with them it appeared that a number of them considered a chance meeting in the street of a few minutes to have the same value as a house or field visit.

Some KVS's living close to a CF made it a habit to drop in almost daily, while we found other instances of CF's, randomly selected from the list provided by the KVS, who claimed never to have been visited and who were unaware of their position as a CF. In Madiha Godagama we found three cases where the KVS had made arrangements to leave the message with a neighbour or a relative if the CF was not found at home. In Urubokka one of the KVS's made it a custom to go to the sunday pola (market) and meet his CF's there.

Nothing definite can be said about the place of the visit. Sometimes the KVS meets the CF at home and discusses his message there. Often the message entails a visit to the fields but the case of a KVS meeting a CF in his fields is equally prevalent.
Table 5.6 presents the number of FF generally present at a visit of the KVS as recalled by the KVS's.

Table 5.6 : Number of FF present at the KVS-visit.

AI-division		I	II	III	IV	V	VI	total
0	FF present	-	-	-	-	-	1	1
1-5	" "	1	3	1	2	2	2	11
6-10	" "	2	-	1	1	1	-	5
>10	" "	-	-	1	-	-	-	1
								18 KVS's

The KVS's had different experiences with the farmers. Some KVS's have the impression that the farmers suspect them of not fully understanding the message themselves. They argue that the KVS has only theoretical knowledge while it's his harvest that is at stake.
The KVS's also found, not surprisingly, that younger farmers are more inclined to ask questions while the older farmers tend to stick to the cultivation practices they have learned long ago.

5.6 Adoption and Dissemination of Recommendations.

Our assessment of the adoption of recommended practices is based on the observations and opinion of the KVS's, CF's and FF's. Their points of view are of course subjective and prejudiced almost by definition and any conclusions drawn from them can only be seen as rough indicators.

We asked the KVS's for their opinion of the four indicators we selected:
-fertilizer application method
-seed variety
-planting method
-method of weed control.
Table 5.7 presents the answers to the question whether they advise the farmers to practise the recommended cultivation methods.

Table 5.7 : KVS advice to the farmers regarding recommended practices

AI-division		I	II	III	IV	V	VI	total	%
fertilizer	yes:	1	2	1	2	-	3	9	50
application	no:	2	1	2	1	3	-	9	50
								18	100
seed variety	yes:	3	1	3	3	3	2	15	83
	no:	-	2	-	-	-	1	3	17
								18	100
planting method	yes:	3	1	1	3	3	1	12	67
	no:	-	2	2	-	-	2	6	33
								18	100
method of weed	yes:	2	2	3	2	3	2	14	78
control	no:	1	1	-	1	-	1	4	22
								18	100
total	yes:	9	6	8	10	9	8	50	70
	no:	3	6	4	2	3	4	22	30
								72	100

In itself the fact that the KVS does not advise the farmers to apply the recommended practices in a number of cases is striking. Several explanations, favourable as well as unfavourable, may be brought forward to account for this behaviour.

A 'yes' does not necessarily imply a 'good' KVS. It may mean that the KVS in question has dutyfully noted down the message at the training session and passes it on to the CF like a recipe to be closely followed.
On the other hand the KVS may have adapted the message given at the training session, possibly with the cooperation of the AI and his fellow KVS's, to suit the needs and potentials of the farmers in his region and is therefore able to recommend it wholeheartedly.

Similarly a 'no' can be answered to imply that the recommended practices are not quite suitable for the specific area and that the KVS delivers a message tailored to the farmers potentials, or it may indicate a meek renunciation of a message he knows the farmers cannot apply.

The figures in table 5.7 moreover give the impression that the more specific the message; e.g. in the case of fertilizer specific types and exact amount and time intervals are advised, the higher the 'no' percentage becomes.

To get some idea of the impact of the T&V programme we asked the CF's to estimate the number of their FF and the number of FF who they think learned the recommended cultivation practices from them. Table 5.8 presents the answers, given as an average per AI-division. The numbers provided by the CF's ranged from more than fifty to a modest two or three.

Table 5.8 : Number of FF as claimed by the CF's.

AI-division	I	II	III	IV	V	VI	average
number of FF	25	13	25	9	25	4	17
number of FF who learned cultivation practices	18	6	21	3	14	3	10

In their turn the FF's were asked for their concern with T&V. Almost fifty percent of the FF's claimed never to have heard of the programme in any way. Thirtyeight percent did not know the CF as such, only as a neighbour or a relative. Of the forty FF's who did know the CF all but one thought him suitable for the job, at least not unsuitable, but it was clearly not a matter about which they felt very strongly.
The figures are presented in table 5.9.

Table 5.9 : FF aquaintance with T&V and CF.

AI-division		I	II	III	IV	V	VI	total	%
-Do you know about T&V ?	yes:	12	2	10	1	8	-	33	51
	no:	-	9	2	11	4	6	32	49
-Do you know the CF ?	yes:	8	3	10	3	12	4	40	62
	no:	4	8	2	9	-	2	25	38

As a last graduator for their interest in the extension effort the FF's were asked whether they had attended any fieldday or visited any demonstration plots during the last Maha season. Their answers are given per AI-division.

Attendance of fielddays and visits to demonstration plots:

AI-division I : 7 out of 12 FF's went about 3 times.
II : 2 " " 8 " " once.
III : 8 " " 12 " " "
IV : 4 " " 12 " " "
V : 6 " " 12 " " about 4 times.
VI : none of the 6 FF's attended any fieldday or visited any demonstration plot.

In determining whether or not a specific CF or FF adhered to the recommended agricultural practices we based ourselves on the recommendations as set forth by the KVS involved. We then marked the method used by the farmer from 1 to 3; '1' signifying exact application of the recommended practice, '2' signifying slightly altered application of the recommended practice and '3' signifying an other than the recommended practice.
Tables 5.10 and 5.11 give some indication of the degree to which the CF's and FF's have been sensitive to the KVS's advice.

Table 5.10 : CF scores on the KVS's recommendations.

AI-divisions	score	I,II	III,IV	V,VI	total	%
fertilizer	'1'	2	1	5	8	21
	'2'	5	5	3	13	34
	'3'	3	6	8	17	45
					38 @	100
seed variety	'1'	6	5	16	27	71
	'2'	-	-	-	-	-
	'3'	4	7	-	11	29
					38	100
planting method	'1'	8	9	9	26	68
	'2'	-	2	4	6	16
	'3'	2	1	3	6	16
					38	100
method of	'1'	4	4	10	18	47
weed control	'2'	1	-	1	2	6
	'3'	5	8	5	18	47
					38	100
total	'1'	20	19	40	79	52
	'2'	6	7	8	21	14
	'3'	14	22	16	52	34
					152	100

@ 3 of the 41 CF's do not grow paddy.

Given a total of 152 (38 x 4) possibilities for the CF's to have followed the KVS's advice, we found 100 (79 + 21) instances where a '1' or '2' was scored. When asked from whom he had learned this specific method (be it fertilizer application, seed variety, planting method or weed control) the CF's 52 times mentioned the KVS among their scources of information. Had they not learned the particular cultivation practice from the KVS the usual answer was 'from other farmers' and now and again 'from the Agricultural Overseer (predecessor of the KVS in the earlier Extension Programme).

The FF's had 240 (60 x 4) possibilities to have followed the KVS's advice. (see table 5.11) Of the 130 (114 + 16) '1' and '2' scores, 66 FF's mentioned the KVS as the person from whom they had learned the practice and 6 the CF.

Table 5.11 : FF scores on the KVS's recommendations..

AI-divisions	score	I,II	III,IV	V,VI	total	%
fertilizer	'1'	7	3	5	15	25
	'2'	5	5	6	16	27
	'3'	7	15	7	29	48
					60	100
seed variety	'1'	14	14	16	44	73
	'2'	-	-	-	-	-
	'3'	5	9	2	16	26
					60	100
planting method	'1'	12	6	2	20	33
	'2'	-	-	-	-	-
	'3'	7	17	16	40	67
					60	100
method of	'1'	12	12	11	35	58
weed control	'2'	-	-	-	-	-
	'3'	7	11	7	25	42
					60	100
total	'1'	45	35	34	114	47
	'2'	5	5	6	16	7
	'3'	26	52	32	110	46
					240	100

CHAPTER 6

CONCLUSIONS:
STRENGTHS AND LIMITATIONS OF T&V IN MATARA

6.1 Strengths

One of the striking aspects of the T&V Extension Approach is its furtherance of the interaction between the three levels involved in advancing agricultural development: farmers, extension and research.
At the time of our survey T&V had been in operation for about one and a half year; during this period the interaction had become well-established.
The systematic visits and training sessions at which the flow of information is two directional contribute to this interaction.
Another aspect of T&V which is very important to the low- and middle -income agriculture of Matara is the use of no- and low-cost technology. This feature can be recognised in the emphasis with which the Depok system of seed germination, transplanting in rows and weeding by hand are propagated.

6.2 Limitations

On page 2 of this report we enumerated some five conditions for a successful implementation of T&V as laid down by its founder, Daniel Benor.
Save for the second condition, that of a unified extension service, all conditions are met. As T&V in Matara is mainly concerned with Paddy and Homegardening, one would expect the programme to be a success for these crops at least. Our survey has not convincingly demonstrated that this is the case.

- Adoption of Recommendations
In paragraph 5.6 we concluded that the adoption of recommendations leaves much to be desired both with the CF's and the FF's. This can be attributed to the fact that:
1) in some cases the farmers are not interested in the higher yields

which would be the result of the recommendations. For instance in the case of seed varieties many farmers prefer the taste of the local, lower yielding variety of red paddy, H4 to higher yielding New Improved Varieties.

2) recommended inputs are not easily available.
3) many farmers are part-time farmers to whom agriculture is a supplementary source of income.
4) FF's prefer to learn the recommendations directly from the KVS rather than by way of an intermediary.
5) FF's and CF's sometimes don't know each other. Not all CF's have been made to realizethe importance of their position to the total extension effort.
6) the frequent occurence of shared ownership (thattumaru) does not stimulate the farmers to tend their land carefully.
7) The danger of flooding inhibits the farmer to invest in enough fertilizer, pesticides or to use the transplanting or depok system.

- The Message

The messages are too discrete, while the cultivation practices are manifold and call for a more flexible approach. In this respect T&V must be thought to be more suitable for e.g. a settlement scheme where the farmers cultivate their land under identical conditions. This is not the case in Matara. Too much may therefore be asked of the KVS who is trained to deliver a limited number of straightforward lessons and not to give all sorts of individual advices. The fact that the KVS's knowledge appears to be fragmentary makes the farmers hesitant to experiment on the basis of his recommendations. Furthermore the farmers sometimes do not fully understand the message and are therefore afraid to practise it; the KVS must make sure that ignorance is not a reason for discarding the message.

- The Visit

The visit of the KVS's to the CF's and FF's does not always have the quality and regularity that are stipulated in the T&V Extension Model. Unfortunately it is not always within the power of the KVS to attain the necessary regularity. It is however in their power to maintain a higher quality. The KVS's must guard against letting the quality of the visit slacken. Chance meetings on the road or at the pola, or a message left with a relative or neighbour do not have the same value as a house or field visit that is much more visibly part of an extension effort and not a social call. As for attendance of the FF's and the dissemination of the message to the

FF's it might be wise to consider working with Contact Groups rather than with the individual Contact Farmers.

- Selection of CF's

As has been noted in detail in paragraph 5.4 a careless selection of the CF's which at times did not shirk from nepotism and political appointments can be held partly reponsible for the fact that the CF's form too weak a link in the dissemination of the extension messages to all farmers. Should the individual approach of CF's who are supposed to pass down the messages to FF's remain a feature of T&V in Matara in the future a much more careful selection and preferably election of CF's is indispensable.

- KVS's

We found that in many cases the KVS is unable to complete his fortnightly round of visits. This may be due to the fact that:

-the KVS has a lack of transport facilities

-at times the roads are not passable as a result of bad weather

-part-time farmers are difficult to reach

-the lack of incentives of any kind has a discouraging effect on the KVS's; it dampens their necessary enthusiasm

-especially in the Hill country six CF's may be too many to visit on one day.

-Housing. Their work forces the KVS's to live in rural areas where housing and educational facilities for children are hard to find. Almost all KVS's have complained of this problem and its consequences: living apart from their families. The result may be a negative selection favouring younger and less experienced KVS's. In our opinion this is a serious problem and an impediment to the functioning of this link in the T&V Extension Effort.

-Transport facilities. Although public transportation in Matara is quite good, one cannot expect the KVS's to depend on it completely for their traveling as many of the farmers can only be reached by foot or on a bicycle. Unfortunately most KVS's do not have a bicycle which makes transportation a serious problem for them as most CF's live too far apart to enable the KVS to visit six a day on foot. The same goes for the AI's. It may therefore be advisable for the Dept. of Agriculture to consider granting the KVS's and AI's a loan to buy a bicycle on suitable terms. Also an adequate fixed monthly travel allowance should be given to meet the cost of maintaining the bicycle or covering other travelling expenses.

- Extension exclusively

Benor stresses that "extension personnel should devote all their time exclusively to professional agricultural extension work. Supply of inputs should not be their responsibility."
We wonder if this is feasible or even desirable.
As it is KVS's often provide seeds for homegardening or paddyseed of New Improved Varieties for demonstration farmers and other interested farmers. As the KVS's are the only link between the field and the authorities whom the farmers meet regularly, it may be worth considering to give them an official position in providing the farmers with inputs and cultivation aids as rotary weeders and spraying machines. However this suggestion should be very carefully considered; it is one of the improvements of T&V over earlier extension programmes that the KVS's are not overburdened with all sorts of administrative work and collection of general statistics. This improvement should not be lightheartedly undone.

- Internal Monitoring

Internal monitoring has been deliberately built into the T&V Extension Model. The results of our survey cannot but leave the impression that insufficient use is made of this feature of T&V. If T&V is to function optimally, internal monitoring should not only be an integral part of the effort, but immediate action should be its result.
Some of the worse CF's we met are not just a weak link in the extension effort but jeopardize it for years to come as the FF's lose interest. The same can be said for one or two of the KVS's we met.
Internal monitoring however should not just be seen as 'checking up on bad personnel', it also provides a means for redirecting the programme if this is indicated by the gathered information (see chapter 3). Full use should be made of this possibility.

6.3 Follow up

In the context of the setting up of an evaluation system for the Integrated Rural Development Programme an agreement was made to study the functioning of the Training and Visit system and its impact in Matara.
As our survey has the character of a monitoring effort it was indispensable to make arrangements for a follow up study. This study which should disclose the effect and impact of the system could be undertaken by students of the Rahuna University in Matara.
We hope that the results of this report can be of use in the ensueing study.

ANNEX I - QUESTIONNAIRES

A.I. Questionnaire

Date:

A.O. Region:

1) Name:

2) Education:

3) 3.1 Which district are you from?

   3.2 Which village?

4) How many KVS's do you supervise?

5) Number of contact farmers:

6) Number of farm families:

7) Means of transportation: bus / motorbike / pushbike / walking

8) How often has the research branch been presented with unexpected problems encountered by KVS's during their fieldwork in the last Maha season?

   8.2 Could they solve all problems?

   8.3 Was the response timely and adequate?

9) How many times have you accompanied your KVS's on farm visits during the last Maha season?

10) Can you fill in this fortnightly time schedule?

Monday:	Monday:
Tuesday:	Tuesday:
Wednesday:	Wednesday:
Thursday:	Thursday:
Friday:	Friday:
Saturday:	Saturday:
Sunday:	Sunday:

11) Are the recommended practices selected by the extension program practical for most farmers?

   11.2 If not, why not? too costly / too complicated / inputs not available / other .. .. ..

12) What is your opinion of the T and V system?

KVS Questionnaire

Date:

A.O. Region:

KVS Region:

1) Name :

2) Education:

3) 3.1 Which district are you from?

   3.2 Which village?

4) What means of transportation do you use for your visits?

   bus / motorbike / pushbike / walking

5) 5.1 How many contact farmers do you visit?

   5.2 Approximate number of farm families?

6) About which crops do you give extension?

paddy	tea	Minor Export Crops
cinnamon	rubber	Homegardens
coconut	vegetables	other

7) How many fortnightly training sessions have you attended during the last Maha season?

8) During these training sessions is there / are there:

   * enough time spent on other crops than paddy?

   * enough time spent on extension methods training?

   * sufficient distribution of leaflets and other demonstration aids?

   * are the problems presented by the KVS satisfactorily solved?

   * enough breaks?

   * other remarks:

KVS Questionnaire (Cont'd)

9) Have you been accompanied by your A.I. on any of your visits to contact farmers during the last Maha season?

10) Can you fill in this fortnightly time schedule?

1st week - Monday:
Tuesday:
Wednesday:
Thursday:
Friday:
Saturday:
Sunday:

2nd week - Monday:
Tuesday:
Wednesday:
Thursday:
Friday:
Saturday:
Sunday:

11) Were you able to visit all contact farmers during the last Maha season? If not, why not?

12) Do you give information to the farmers mostly at the farmers home or in the fields?

13) Do follower farmers attend the meetings you have with the contact farmer? none / 1-5 / 6-10 / more than 10

Does the contact farmer ask questions about the messages you present? none / seldom / sometimes / often

Do the follower farmers ask questions about the messages you present? none / seldom / sometimes / often

KVS Questionnaire (Cont'd)

14) What were the three most important messages during the last round of visits?

1)

2)

3)

15) Does it sometimes happen that you change the message given at the fortnightly training session?

Why or why not?

16) 16.1 What do you think of the recommended fertilizer application method?

Do you recommend it to the farmers?
Why or why not?

16.2 What do you think of the recommended seed variety?

Do you recommend it to the farmers?
Why or why not?

16.3 What do you think of the recommended planting method?

Do you recommend it to the farmers?
Why or why not?

16.4 What do you think of the recommended method of weed control?

Do you recommend it to the farmers?
Why or why not?

Contact Farmer Questionnaire

Date:
A.O. Region:
KVS Region:

1) Name :
2) Age :
3) Education:

4) Why were you selected as a contact farmer?

5) Is farming your main occupation? yes / no
If no, what other occupation?

6) Are you the owner of the land, tenant or owner/tenant?

7) 7.1 How many acres of land do you own/rent?
7.2 What is the number of separate fragments?
7.3 What proportion of the land is irrigated?
7.4 What is the land use?

tea -	Acres	cinnamon -	Acres
rubber -	"	homegarden -	"
paddy -	"	other -	"
coconut -			

7.5 Do you keep any livestock?

8) Are the KVS visits on the same day and at the same time every fortnight? yes / no
If yes, is that a convenient hour?
If no, note divergence:

9) Do the visits usually take place at your home or in the fields?

10) Does the KVS give extension about other crops than paddy?
Which other? Note the 3 most important: 1)
2)
3)

About which crop does he talk the most?

Contact Farmer Questionnaire (Cont'd)

11) 11.1 Do you use the recommended Fertilizer application method?
Other method 1 2 3 4 5 Recommended method
If 1 to 4, why don't you use the recommended method?
too expensive / not worth while / not available /
too risky / no credit / other reason .. ..

11.2 If 5, since when? Yala '79 or earlier / Maha '79/'80 /
Yala '80 / Maha '80/'81

11.3 Who told you about it? KVS / other contact farmer / neighbour /
relative / cooperative / other .. ..

11.4 Do you plan to use this method in the next Yala season?

11.5 If no, why not? too expensive / not worthwhile / too risky /
not available / no credit / other reason ..

12) 12.1 Do you use the recommended seed variety? yes / no
If no, which seed variety do you use?
Why don't you use the recommended seed?
too expensive / not worthwhile / not available /
too risky / no credit / other reason .. .. ..

12.2 If yes, since when? Yala '79 or earlier / Maha '79/'80 /
Yala '80 / Maha '80/'81

12.3 Who told you about it? KVS / other contact farmer / neighbour /
relative / cooperative / other .. ..

12.4 Do you plan to use this seed variety in the next Yala season?

12.5 If no, why not? too expensive / not worthwhile / too risky /
not available / no credit / other reason .. ..

13) 13.1 Do you use the recommended planting method?
Other method 1 2 3 4 5 recommended method
If 1 to 4, why don't you use the recommended method?
too expensive / not worthwhile / too risky / other
reason .. .. ..

Contact Farmer Questionnaire (Cont'd)

13.2 If 5, since when? Yala '79 or earlier / Maha '79/'80

13.3 Who told you about it? KVS / other contact farmer / neighbour / relative / cooperative / other .. ..

13.4 Do you plan to use this method in the next Yala season?

13.5 If no, why not? too expensive / not worthwhile / too risky / other reason .. ..

14) 14.1 Do you use the recommended method of weed control?
Other method 1 2 3 4 5 recommended method
If 1 to 4, why don't you use the recommended method?
too expensive / not worthwhile / not available / too risky / no credit / other reason .. .. ..

14.2 If 5, since when? Yala '79 or earlier / Maha '79/'80 / Yala '80 / Maha '80/81

14.3 Who told you about it? KVS / other contact farmer / neighbour / relative / cooperative / other .. ..

14.4 Do you plan to use this method in the next Yala season?

14.5 If no, why not? too expensive / not worthwhile / too risky / not available / no credit / other .. .. ..

16) Have other farmers approached you with questions regarding cultivation practices? no / a few / many

17) Can you give any comments or suggestions the farmers would like to pass on?

18) What is your own opinion about the T and V-extension system?

19) Have you been visited by other extension officers than your regular KVS during the last Maha season?

Follower Farmer Questionnaire

Date:

A.O. Region:

KVS Region:

Contact Farmer's name:

1) Name:

2) Is farming your main occupation? yes / no
   If no, what other occupation?

3) Are you the owner of the land, tenant or owner/tenant?

4) 4.1 How many acres of land do you own/rent?
   4.2 What is the number of separate fragments?
   4.3 What proportion of the land is irrigated?
   4.4 What is the land use?

tea -	acres	cinnamon -	acres
rubber -	"	homegarden -	"
paddy -		other -	"
coconut -	"		

   4.5 Do you keep any livestock?

5) Do you know about the T and V system? yes / no

6) Do you know the Contact farmer in your area? yes / no

7) If yes, do you think him suitable for the job? yes / no

8) If no, why not?

9) Have you attended a field-day or demonstration-plot organised by the extension service during the last Maha season?

Follower Farmer Questionnaire (Cont'd)

10) 10.1 Do you use the recommended Fertilizer application method?
Other method 1 2 3 4 5 recommended method
If 1 to 4, why don't you use the recommended method?
(too expensive / not worthwhile / not available /
too risky / no credit / other reason .. .. ..

10.2 If 5, since when? Yala '79 or earlier / Maha '79/'80 /
Yala '80 / Maha '80/'81

10.3 Who told you about it? KVS / contact farmer / other farmer /
cooperative / other .. .. ..

10.4 Do you plan to use this method in the next Yala season?

10.5 If no, why not? too expensive / not worthwhile / no credit /
not available / too risky / other reason .. ..

11) 11.1 Do you use the recommended seed variety?
If no, which seed variety do you use?
Why don't you use the recommended seed variety?
too expensive / not worthwhile / not available /
too risky / no credit / other reason .. .. ..

11.2 If yes, since when? Yala '79 or earlier / Maha '79/'80 /
Yala '80 / Maha '80/'81

11.3 Who told you about it? KVS / contact farmer / other farmer /
cooperative / other .. ..

11.4 Do you plan to use this seed variety in the next Yala season?

11.5 If no, why not? too expensive / not worthwhile / no credit /
too risky / not available / other reason .. ..

12) 12.1 Do you use the recommended planting method?
Other method 1 2 3 4 5 recommended method
If 1 to 4, why don't you use the recommended method?
too expensive / not worthwhile / too risky / other reason ..

Follower Farmer Questionnaire (Cont'd)

12.2 If 5, since when? Yala '79 or earlier / Maha '79/'80 / Yala '80 / Maha '80/'81

12.3 Who told you about it? KVS / contact farmer / other farmer / cooperative / other .. .. ..

12.4 Do you plan to use this method in the next Yala season?

12.5 If no, why not? too expensive / not worthwhile / too risky / other reason .. .. ..

13) 13.1 Do you use the recommended method of weed control?
Other method 1 2 3 4 5 recommended method
If 1 to 4, why don't you use the recommended method?
too expensive / not worthwhile / not available / too risky / no credit / other reason .. .. ..

13.2 If 5, since when? Yala '79 or earlier / Maha '79/'80 / Yala '80 / Maha '80/'81

13.3 Who told you about it? KVS / contact farmer / other farmer / cooperative / other .. .. ..

13.4 Do you plan to use this method in the next Yala season?

13.5 If no, why not? too expensive / not worthwhile / too risky / not available / no credit / other reason .. ..

14) Where do you usually obtain information about agricultural practices?
contact farmer / extension agent / other farmers / relatives / cooperative / written material / radio / other .. .. ..

ANNEX II :

Cultivation Practices.

To give some idea of the recommended cultivation practices the advices of a randomly selected KVS (IV C : Poraba Kananke) are presented below. The recommendations are followed by some remarks of the KVS.

1) Fertilizer Application.

The KVS recommends:

1. Basal application	5-15-15 NPK	100-125 kg/acre	just before sowing	
2. 1st Top dressing	Urea	25 kg/acre	2 weeks after sowing	
3. 2nd Top dressing	Urea	12½ kg/acre	4,5 "	" "
4. 3rd Top dressing	TDM	37½ kg/acre	10 "	" "

Remarks:

-The Basal application is sometimes practised too late; in the course of the first two weeks after sowing while it should be applied one day or shorter before sowing.

-An insufficient amount of fertilizer is used:

-for each of the four steps a lesser dose is applied

-one or more of the steps are omitted with the result that often only the NPK is used.

2) Seed Variety.

The KVS recommends:

-BG 11-11

-BG 400-1

-BG 94-1

-H4 (because the farmers like it)

Remarks:

-The recommended seed varieties are often not available

-The farmers sometimes score very bad results, and whether it was due to their own fault or not, they are not interested in further experiments.

-The farmers don't like the taste. Many farmers prefer the red 'H4' variety. Some farmers let themselves be persuaded to sow improved varieties on part of their land only if they are convinced that they have enough 'H4' for their own consumption. The higher yielding white paddy is then reserved for trading purposes.

3) Planting Method.

The KVS recommends:

Replanting and Rowsowing

Remarks:

-Broadcasting is still practised by 90% of the farmers because:
 -it is the traditional method
 -it is the only practisable method for boggy soils

-Transplanting
 -more labourintensive and therefore more expensive than broadcasting
 -farmers often have not completely grasped the theory of this method
 -farmers consider this method to be too dependent on timing. They are afraid that late rains will result in bad harvests.
 -the farmers don't want to be the first in their yaya to use this system. They are afraid that they cannot then depend on the reciprocal help from other farmers as is the custom.

-Depok (a method of sowing paddy in 'mats' of several square yards at home and later replanting the little plants in the field).
 -the method is often not understood (there are too few demonstration plots)
 -farmers think the plants too small; they are afraid the plants will not survive and do not consider it a man's job to handle such tiny plants

4) Weed Control.

The KVS recommends:

-Blocking the water

-Chemicals:
 -Saturn and Machete (must be used within seven days of sowing)
 -3,4 DPA and MCPA

Remarks:

-The waterblocking method which purports submerging the field for three days is still commonly practised.

-Chemicals are sparingly used because of the risk of flooding

-The KVS also recommends the use of a Rotary weeder. There are too few of these in circulation. It might be a good idea if they could be borrowed or rented at the ASC. The same goes for Spraying machines.

ANNEX III

Table III - 1: Cultivation Calender for the Maha season '80/"81

No.	Task	September 1-15 16-30	October 1-15 16-31	November 1-15 16-30	December 1-15 16-31	January 1-15 16-31	February 1-15 16-28	Requirements per acre	Inputs and period required
01	Cleaning of the sluices (cleaning of the surrounding area)								
02	Cleaning of the fieldbans and making repairs								
03	I. Land preparation II. Land preparation III. Preparation of seed beds, wetting of paddy seed and preparation for sowing							1 bushel seed paddy	
04	Application of basic fertilizer and levelling of nursary beds							40 lbs. of granules per 1/10 of an acre	
05	Sowing of paddy on the nursary bed (broadcasting to be done one week earlier)							1 bushel seed paddy	
06	Loosening soil and mudding (mixing soil with water) 2. maintainance of nursaires							Curator (2lbs) Urea (7 lbs)	
07	Soaking of paddy in water for sowing and attending to other preparations							2 bushels	

Table III-1 (Contd...)

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.		
08	Second application of fertilizer, mixing and levelling							granule fertilizer 2 cwt
09	Broadcasting or transplanting (and maintainance of nursaries)							Broadcast sowing 2 bushels row sowing 1¼ bushels
10	Let water flow into the fields where paddy has been and pest control							pesticides
11	In paddy fields meant for transplanting apply basic fertilizer and puddle							2-2½ cwts per acre
12	Removal of plants from nursaries and planting							
13	Pest control (three different methods mentioned)							granule pesticides
14	Water management-weed control-manual and mechanised weed control, liquid weedicides and granules							weeded granule weedicides 20 lbs. 34 DPA 6 pints MCPA 30-40 ozs.
15	Fertilizer application for the first month							Urea 28 lbs. (4 month paddy)

Table III-1 (Contd...)

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	
16 Water control and pest control (2 pests mentioned)							
17 Fertilizer application for the second month							Urea 28-56 lbs.
18 Fertilizer application for the third month - water control and pest control (2 pests mentioned)							TDM 84 lbs.
19 Water management - at the flowering stage control attacks by .... (pest)							Asodrine 10 ozs.
20 Let the water out and harvest (after two weeks)							