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AGRICULTURAL TECHNOLOGY IMPROVEMENT PROJECT (ATIP)

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AGRICULTURAL TECHNOLOGY IMPROVEMENT PROJECT

(ATIP)

WORKING PAPER

ATIP GROUPS REPORT

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ATIP WORKING PAPERS CONSIST OF METHODOLOGICAL AND EMPIRICAL MATERIAL WHICH HAS BEEN REVIEWED INTERNALLY BY ATIP BUT DOES NOT NECESSARILY REFLECT THE VIEWS OF THE DEPARTMENT OF AGRICULTURAL RESEARCH, MINISTRY OF AGRICULTURE, BOTSWANA

ATIP CROUPS REPORT

1. INTRODUCTION :

A major focus of farming systems work is that of improving the welfare of the small farmers by increasing their productivity through the adoption of relevant improved technology.

In Botswana the Agricultural Technology Improvement Project (ATIP) recognises that in order for the small farmer to make permanent changes in agricultural practices he or she has to be involved in the decision making process related those changes. In recognition of this, the Francistown ATIP team started their "farmer group" trial activities in three villages, Matobo, Mathangwane and Marapong in the 1986/87 ploughing season. Farmers in these areas selected innovations that seemed most relevant to their situation and tested them with guidance from researchers. Monthly meetings were held with participating farmers to discuss problems and progress of trials and new technologies.

This approach/strategy became very popular with farmers, hence the numbers of farmers participating in farmers groups with ATIP has increased from 15 (1985-86 one village) to 133 (1987-88 three villages) in three years, (for example the Matobo group has increased from 15 to 53. Due to the rapid expansion of participants the Francistown ATIP project requested the Rural Sociology Unit of the Ministry of Agriculture to attend some of the monthly group meetings and to conduct a short informal survey. The objective of this survey was to find out if there were problems of communication because of the large number of participants, as well as to get farmer assessment of recommended technologies and to come up with recommendations on how to handle to problems identified.

2. METHODOLOGY

Eighteen farmers (6 male and 12 females) were randomly selected from the three villages (Matobo, Mathangwane and Marapong) for the informal survey. The 18 farmers were drawn from a total numbers of 133 ATIP participating farmers. In each village a total of six farmers was selected, two each from three categories of farmers.

The "progressive" category in terms of farmer adoption of ATIP innovation activities, comprised of farmers who owned draught power, had no labour problems and involved themselves in most trials. The "middle" category consisted of farmers who had insufficient draught power, had some labour problems particularly during weeding time, and involved themselves in some trials (more than one trial). The last group, the "poor" category, had no draught power, had severe labour problems throughout the cropping season and involved themselves in not more than one trial.

The other selection criterion used was to have early adopters and late adopters in each category. Of the 18, four were early adopters who were selected by the project prior to 1985/86. The rest 14, volunteered to join between in 1985/86 or 1986/88.

Based on the terms of reference from ATIP, the researcher prepared a set of guidelines for the formal survey and participant observation.

3. RESOURCES NEEDED FOR PARTICIPATING IN ATIP PROJECTS

3.1 TRACTION

One of the issues to be established by the informal survey was the type of draught power used by the ATIP participating farmers. It was discovered

that 12 farmers (progressive and middle groups of farmers) owned and used oxen for ploughing. One from the progressive group owned a tractor. Eight of the 12 preferred to hire a tractor for ploughing all their fields but used oxen for ploughing and planting ATIP trial plots. Three used their oxen for both ATIP plots and other fields,while one borrowed some oxen to complete a span to plant trial plots. The six from the "poor" category had no draught power. Four hired a tractor the ARAP scheme, one exchanged labour for draught power and the last one had not ploughed since joining ATIP because of lack of access and control of draught power.

It would appear that most farmers in all three categories used tractor traction because of availability of ARAP assistance. The withdrawal of this assistance may have an adverse impact on access to traction particularly for the "poor" group.

3.2 LABOUR CONSTRAINTS

Labour was also identified as a major problem by most farmers particularly among the poor and middle group farmers (5 and 4) farmers respectively. Only two from the progressive group mentioned this as a problem. However, the progressive group hired other people for cash to solve labour problems particularly during weeding time. The nine farmers from the middle and poor groups experienced labour constraints during ploughing, weeding, birdscaring and destumping periods. Asked how they solved this problems they said they practiced "letsema" with both ATIP and non-ATIP participating farmers for purposes of securing more labour.

4. REASONS FOR PARTICIPATING IN ATIP

4.1 EARLY ADOPTERS

The four early adopters indicated that when they were selected, prior to their decision to participate, they were told about ATIP's objectives and their role. They all stressed that they remained with ATIP because ploughing methods tried with ATIP were relevant to their needs and conditions on the fields, for example double ploughing helped conserve moisture even in a drought year and also controlled weeds. In a good year yields were much better in ATIP plots compared to the entire fields of mixed crops where they used old methods. Two of the farmers said they now had surplus to sell. ATIP also helped farmers identify and solve arable problems. For instance, the researchers tested the soil and Vegetation on the farmers' fields and advised accordingly. They also used ATIP's insecticides for control of pests.

As one farmer put it "with ATIP's staff my dreams have come true. I have never regreated the move I took to join ATIP". This statement was made to emphasize the point that the farmer in ATIP projects sees him/herself as part of a team that tried experiments on farmer fields because ATIP staff worked with the farmer from ploughing to harvesting. This according to the farmers is crucial because it motivated them to try more new methods and technologies even after a bad year.

4.2 LATE ADOPTERS

The following reasons were advanced by 14 farmers who were not early adopters.

(a). Eleven farmers said they decided to participate because ATIP staff did not tell farmers what to do but performed trials with them throughout the season.

(b).Ten liked ATIP's methods of demostrations on the farmer's fields because the farmers saw the trials working in their fields under supervision.

(c).Seven said they decided to participate because they understood the objectives and liked the idea of provision of seeds, pesticides, fertilisers and implements by the project.

(d).Five mentioned that they were motivated by seeing improved and higher yields achieved by early adopters.

(e).Six joined because of the use of the double ploughing method, which helps to retain moisture and reduce weeds.

(f).Three said they wanted to benefit from the results of soil and vegetation tests performed by ATIP on farmers' fields.

The above responses showed that ATIP is very popular with the farmers because they understand its objectives and also realize the benefits of participation.

5. THE DOUBLE PLOUGHING METHOD

The following table shows the adoption of this method over three years.

Table 1: Farmers Group Members Participating in Double Ploughing

	---PROGRESSIVE---		---MIDDLE---		---POOR---	
YEAR	YES	NO	YES	NO	YES	NO
1985/86	6	0	-	-	1	0
1986/87	4	2	6	0	2	1
1987/88	4	2	4	2	3	2

Although the above table shows responses of farmers in relation to double ploughing only, farmers also indicated that they also row planted, sole monocropped and used fetiliser. Those who did not double plough again in 1986/87 and 1987/88 said they were constrained by lack of traction due to oxen being too weak because of the long drought (these were progressive and middle farmers). The poor farmers were constrained by lack of access and control to draught power. The owners of traction doing ploughing for the poor would plough late or would not be prepared to plough for the second time. Fourteen farmers mentioned that they would continue practicing double ploughing and row planting in their fields.

Double ploughing was preferred to other methods by all farmers (18) because, according to them, it increased yields and helped relieve labour problems by reducing weeds. This was followed by row planting by eight farmers mono-cropping by five farmers, and use of fertiliser by two farmers.

6. THE GROUP APPROACH (FARMERS' PERSPECTIVE)

The group approach as adopted by the Francistown ATIP is essential for both extension and research because it allows free interaction with farmers on issues that are being researched and on other issues that have relevance to the research under review. Also with limited time the researcher can present information to more farmers through the group

approach.

Seventeen of the 18 farmers interviewed said the monthly group meetings were very useful because farmers had a chance to give progress reports of trials to both ATIP staff and other farmers. It was also at those meetings that ATIP specialists and other visitors helped farmers with ideas and solutions to their problems. Farmers mentioned that monthly meetings served as encouragement to motivate farmers to prepare themselves to make contributions at these meetings. After every meeting ATIP specialists visited farmers" fields to see and assess situations that were discussed by farmers.

Asked whether farmers worked as a group to perform ATIP activities most (17) farmers said no because problems were solved individually with ATIP staff. Sixteen mentioned that even at the monthly meetings the objective is to share experiences and problems more with ATIP staff than with other farmers. The farmer who said ATIP group members work as a group mentioned that they do so only by reminding each other of ideas taught by ATIP staff.

Asked if farmers would like to work as a group, all eighteen replied no, and the following reasons were advanced:

(a).Fourteen said it was too early to think of group action because they were all still learning from ATIP staff who were here for a short time.

(b).Two said the ATIP approach did not encourage group work because ATIP staff, sell their ideas of trials to individual farmers, who then participate by experimenting with ATIP staff on their fields.

(c).One mentioned that group work retarded progress, he liked ATIP's individual approach to farmers.

(d).One did not see progressive farmers joining hands with poor farmers. He stressed that even with the traditional group work (letsema) it has always been the poor working on progressive farmers' fields and never the reverse. Even though letsema is a traditional system of assistance, the organizer has to provide food or beer for the letsema group which the progressive and the middle groups are able to provide and the poor group are unable to do. This farmer preferred the current practice of ATIP farmers doing letsema, with non-participants.

9. FARMERS' VIEW ON THE LOW PARTICIPATION ON ATIP TRIALS

One aspect of the informal survey was to examine the low level of participation in some villages. In order to get this information the researcher asked the farmers to give ideas on why some farmers in the community were not interested in ATIP in spite of the benefit that they said they realized from the project, why some joined but later withdrew, and why most farmers ploughed ATIP trials late in the season.

Few responses came from Matobo and Marapong in this section. This was not surprising given the fact that the project is more popular in those two villages than in Mathangwane and so the questions were probably not relevant to them.

9.1 REASONS WHY SOME FARMERS WOULD NOT BE INTERESTED IN ATIP

(a).Six farmers thought it was due to the fact that farmers did not understand ATIP's objectives as they did not attend monthly meetings.

(b).Also six farmers said most people believed that the government never gives things for free, someday ATIP would demand yields or seeds from their plots.

(c).Five mentioned that naturally people are afraid to take risks.

(d).Three mentioned lack of control of draught-power especially if people depend on hired traction.

(e).Two farmers thought ARAP contributed to a lack of interest in production oriented projects like ATIP because it dished out easy money to farmers.

(f).One farmer said some people were lazy because, according to him, ATIP's objectives were clear and ATIP staff were very helpful.

9.2 REASONS FOR WITHDRAWAL FROM ATIP

(a).Five of those who responded blamed the cash flow from ARAP for the withdrawal.

(b).Two mentioned lack of labour and other family commitments (diversification of activities).

(c).Two said it was due to poor working relationships with some ATIP staff. For example, two of the farmers with no draught power stressed that ATIP residential staff were not visiting them as frequently as they expected, and they said this was discouraging.

(d).Two said that, although women do most of the farm work, they do not make decisions. For example, a husband may decide that his wife should stop working with ATIP and there is nothing that the wife can do but to withdraw.

(e).Three farmers had not observed a situation of withdrawal.

9.3 REASONS FOR PLOUGHING ATIP PLOTS LATE

Out of the 18 farmers interviewed eight gave lack of control of traction as the major reason for choosing to plant trials late. They mentioned that where a tractor was used the problem was with tractor owners who were not interested in ploughing small plots due to the high demand for tractor hire. If farmers had to pool resources together with family members or other community members, usually their fields were ploughed late.

Seven said they preferred to plant ATIP trial plots late because seeds supplied by the project matured early, and the quantity was too small to be divided between early and late planting. Three planted ATIP trials late because they had to observe the tradition of eating green mealies with the rest of the community. These include green maize, melons, sweet reeds, pumpkins etc. Since they could not practice mixed cropping on trial plots they felt that they had to plant the entire field first.

The above responses emphasised the importance of farming system's objectives of looking at agricultural accivities from the point of view of the farmers. While they would like to experiment, and in fact adopt new methods of farming, they still treasure their own way of doing things. So maybe ATIP staff should accept that most of the farmers would still plant trial plots late and, therefore, introduce seeds and implements that would be relevant to the given situation.

10. GENERAL COMMENTS

At the end of the informal discussions, farmers were given the opportunity to ask questions and also make comments on the project.

Most farmers liked double ploughing, and row planting methods. The double furrow plough was said to be good. However, some farmers complained that it needed to be pulled by oxen which called for more labour which was already a major constraints. It was felt that both ATIP staff and project planters should be increased because the number of farmers had now also increased. Farmers were aware that ATIP's assistance will end and they expressed a wish to have the project extended. One suggestion from the farmers was that ATIP should hold annual meetings to evaluate progress for the year. Another concern was that although ATIP encouraged farmers to get fertiliser from the government assistance programms, there were problems. For instance, fertiliser was only delivered to farmers on a group basis and individual farmers have to collect it for themselves from agricultural depots, and most ATIP participating farmers cannot afford the transport costs.

The following questions were raised by farmers.

(a). Can ATIP sell plough planters, and small tractors at reduced prices to the farmers? (10 farmers)

(b). Is it possible to increase ATIP plots by ploughing the whole field? (2 farmers)

(c). If a farmer fails to plant seeds given by the project does he/she have to return them? (1 farmer)

(d). Since participants will continue practicing the methods taught by ATIP, would researchers visit them occasionally to see how they were progressing? (2 farmers)

11. CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of the informal survey and observations from attending one of the monthly meetings it can be concluded that:

(a). ATIP participants did not perceive themselves as a functional group nor were they prepared to work as a group, except for the purposes of letsema. However, given the number of the technical staff that had to cover the group, it would seem that the groups were definitely too big. Given also the popularity of ATIP activities, the three groups are going to increases in size. thus posing more problems for the staff in terms of coverage and provision of implements. If ATIP decided to continue with the group approach it is recommended that they should consider reducing the size of the groups. One way of doing this would be by determining the target group, and based on the activities, resources of ATIP, and the distance, decide on the number of farmers per full time field

assistant.

(b).Although almost all farmers understood the objectives of the trials, the groups, were too big to allow every farmer the opportunity to express their thoughts and needs at monthly meetings. Smaller groups of farmers with common problems, resources and interests might be more appropriate in getting information from most farmers, if feedback is what the staff want.

(c).The findings of the survey showed that most farmers in the three villages used tractors (from ARAP) for ploughing, even though some -- especially in Matobo and Marapong -- indicated that they used oxen for ATIP plots.

(d).The high rate of tractor use in Mathangwane, and less use of oxen, could be partly causative to the low level of participation in that village. With lack of access to and control of traction, farmers cannot practice methods of double ploughing as they are more likely to plough late every year given the long queue for the limited numbers of tractors available in their areas.

(e).Generally, farmers were impressed with ATIP trials because they stressed that they were relevant to their conditions. ATIP staff's dedication and hardwork was seen as a motivating factor because at the end of the season, a crop success or crop failure was seen as a team's effort.