

Project 621-0117
Contract AID-T-621-78-08

OBSERVATIONS ON THE MBULU SMALL FARMER

FOOD CROP LOAN PROGRAM

LOUISE FORTMANN

Prepared for USAID/Tanzania
April 1978

BEST AVAILABLE COPY

TABLE OF CONTENTS

List of Tables and Figures	ii
Introduction	1
Survey Methods	1
Survey Location	1
The Sample	1
Villages	1
Farmers	2
Leaders	2
Sample Size	2
Questionnaires	3
Data Analysis	3
Description of the Program	3
Description of the Sample Villages	4
Control Villages	4
Loan Villages	6
Who are the Loan Recipients?	8
Villages	8
Individuals	9
Repayment	20
Financial Feasibility	22
Difficulties in Program Operation	24
Information	24
TRDB Administrative Difficulties	24
Village Problems	25
What does the Program Accomplish?	25
Footnotes	29

LIST OF TABLES AND FIGURES

- Table 1. Summary of 1976/77 and 1977/78 Small Farmer Food Crop Loans in Mbulu District p. 5
- Table 2. Comparison of the Percent of Borrowers and Non-Borrowers Who Sell Crops p. 10
- Table 3. Comparison of Borrowers and Non-Borrowers on Measures of Wealth p.11
- Table 4. Comparison of the Farming Practices of Borrowers and Non-Borrowers p.14
- Table 5. Comparison of the Mean Education and Mean Extension Contact of Borrowers and Non-Borrowers. p. 16
- Table 6. Comparison of Mean Agricultural Sales by Borrowers and Non-Borrowers in Loan Villages (Shillings) 1977 p, 17
- Table 7. Comparison of Mean Agricultural Sales by Borrowers and Non-Loan Villagers (Shillings) 1977 p. 18
- Table 8. Comparison of Mean Agricultural Sales by Non-Borrowers in Loan and Non-Loan Villages (Shillings) 1977 p. 19
- Table 9. 1976/77 Loan Recovery as of March 10, 1978 p. 21
- Table 10. Comparison of Mean Wheat Yields Obtained by Borrowers and Non-Borrowers 1977 (90 kg Bags per Acre) p. 26
- Table 11. Responses to "What do you need a loan for?" p. 28
-
- Figure 1. Comparison of Acreage Distribution Among Borrowers and Non-Borrowers p. 13

INTRODUCTION

This report describes the operation of the Tanzania Rural Development Bank (TRDB) Small Farmer Food Crop Loan Program (SFFCLP) in Mbulu District during the 1977/78 cropping season. It is based on reports provided by TRDB and a sample survey carried out in twelve villages in Mbulu District during February and March 1978. The survey, the first of a series to be carried out in different regions and on different crops, was primarily intended to provide baseline data for subsequent evaluations. This report consists of a description of the program and a discussion of issues discovered in the course of field research. Project evaluation will be possible only after the collection of an additional year's data.

The survey was carried out by TRDB credit supervisors (R. Chilewa, N. Daulinge, K. Hyder, O. S. Kiure, M. Kyungu, J. Mawalla, C. Mbakileki, W. Muhando, W. J. Tupa, J. Ndaga, S. Onyando and J. P. Mwikombe) who did an excellent job in a short period of time. Mr. D. Y. Temu, TRDB, Development Division served as a field supervisor. Mr. S. M. Mhando, Project Officer, Arusha Region, provided logistical assistance and invaluable information. Assistance in survey preparations and in the field was provided by Dr. V. Quintana (TRDB), R. Gollehon (TRDB/USAID), B. Hill (USAID), P. Vance (USAID), Dr. A. Urrio (Faculty of Agriculture and Forestry), and Mr. Kiriatu, (TRDB/Arusha).

SURVEY METHODS

The survey was originally to have been carried out in two districts: Muheza District, Tanga Region (a maize area), and Mbulu District, Arusha Region, the site of the oldest individual project in the program. Due to an outbreak of cholera, the Tanga survey had to be abandoned. This is unfortunate as Mbulu District, particularly the North Iraqw area where the survey was carried out, is hardly representative of Tanzanian agriculture. As agriculture in the area is mechanized and commercialized to an unusually high extent, it would be difficult to generalize most of the findings to other areas. The organizational difficulties identified in the program are more likely to be typical.

The Sample

a. Villages

Six villages which received a SFFCLP loan were chosen by R. Gollehon (TRDB/USAID) as typical of the area. One of these had to be replaced due to logistical difficulties.

Six non-loan villages were chosen with the assistance of S. M. Mhando, TRDB/Arusha. Non-loan villages were defined as those which had not received an SFFCLP loan. This did not mean that no one in the village received such loan money. In a number of cases villagers, particularly leaders, received loans through another village.

... through another village.

b. The following Swahili words are used throughout the text: Bwana Shamba (extension agent), shamba (field), and jembe (hoe).

b. Farmers

Loan Villages

A sample of 15 borrowers in each loan village was chosen by taking every seventh name from the list of borrowers excluding the chairman and secretary. A sample of ten non-borrowers was chosen by taking every seventeenth name from the village membership list excluding borrowers, the chairman and secretary.

Non-Loan Villages

A sample of twenty-five farmers in each non-loan village was chosen by taking every seventeenth name from the village list excluding the chairman, secretary, and any borrowers who could be identified.

c. Leaders

The chairman and secretary of each village was interviewed.

d. Sample Size

Nine questionnaires were discarded and nine borrowers, reclassified as non-borrowers due to sampling error. This left the following sample:

	<u>Farmers</u>		<u>Leaders</u>
	<u>Borrowers</u>	<u>Non-Borrowers</u>	
Project Villages	78	67	12
Women	(6)	(8)	-
Non-Project Villages	--	146	9
Women	--	(27)	-
Total	78	213	21
Farmers Total N	291		

Women comprised 16 percent of the non-borrower sample and 8 percent of the borrower sample. In addition to the 78 farmers, information was collected on two institutional borrowers, a school and a UWT (Umoja wa Wanawake wa Tanzania, the national women's organization).

Questionnaires

English translations of the questionnaires can be found in Appendix A. Information on village institutions, finances, agriculture and loan history was collected by interviewing available village leaders with the Community Information questionnaire. Baseline data on farmers' possessions, agricultural practices and sales, extension contract, demographic characteristics, and loan history were collected with the Kiswahili farmer questionnaire.

Data Analysis

A score of possessions for each respondent was computed by summing weighted values assigned to each possession, resulting in possible scores of 0 to 81.

An extension contract score was computed by summing the weighted values assigned to the frequency of the following activities: The Bwana Shamba visits the respondent's shamba, talking with the Bwana Shamba, attend farming demonstration, attend a meeting called by the Bwana Shamba, visit research or demonstration plot, listen to a "Mukuline wa kisase" (an agricultural radio program), read "Ukulima wa kimasa" (an agricultural publication).

Add data were analyzed manually, using commercially available HP 65 "Stat Pak 1" programs and a test program written by Dr. C. S. Whitmore, University of Dar es Salaam.

Outlines for future analysis are available on request from TRDB and USAID/Tanzania.

Description of the Program

Since 1974/75 TRDB has provided in-kind loans for wheat production in Mbulu District under a Small Farmer Food Crop Loan Program designed to serve farmers with 20 hectares or less. During the 1976/77 cropping season these loans were administered through the villages.

Under the provisions of the 1975 Villages and Ujamaa Villages Act any village which has established its boundaries, has 250 households, and has elected a village council may be registered as a corporate body. Only villages so registered are eligible to receive loans from TRDB. TRDB has refrained from soliciting loans on the theory that solicited loans are likely to be regarded as grants and never repaid. A village which wants an SFFCLP loan must apply to TRDB on its own initiative. The loan is made in the name of the village which is responsible as a body for repayment and guarantees any on-lending to individuals. The village is also responsible for arranging for the transport of loan inputs (wheat seed from Tanzania Seed Company in Karata and diesel from Tanganyika Farmers Association (TFA) in Karata.

The loans given in 1976/77 season and planned for the 1977/78 season are presented in Table 1. Both the number of loan villages and the value of the requested loans has increased slightly. Lack of major expansion may be due in part to TRDB's enforcement of its repayment policy.

Under the policy the villages are responsible for repayment but they are also provided a reasonably straightforward way of collecting the loans. After the abolition of the cooperatives, National Milling Corporation (NMC) became the authorized buyer of food grains. The village acts as the buying agent for NMC and receives a commission for its services. The village is in the position to deduct loan payments from the sales of each loan recipient. Should the village fail to repay its loan, it is required to sign a letter of irrevocable authority which enables TRDB to recover the loan from the commission owed the village by NMC. Villages which refuse to do this are not eligible for another loan.

The village may use the loan inputs on the ujamaa shamba or it may on-lend to individuals in the village. Most of the inputs in the sample villages were on-lent. Some inputs are on-lent to individuals outside the loan village. During the 1976/77 season Rhotia on-lent to Kilimatambo; Gongali to Qurus; Endadash to Basodawish, Waru and Endamarariek; and Ayalabe to the Mbulu Development Corporation. Such extra-loan village on-lending occurred for various reasons. In some cases loans-villages on-lent to people living in villages which had been split from the loan village during the process of villagization. Thus, it was said of Rhotia and Kilimatambo "they used to be the same village and whatever they do, they do together." In other cases politically or economically influential people received loans from other villages.

Description of the Sample Villages

The survey area is, by Tanzanian standards, a highly commercialized, highly mechanized area lying at approximately 5,800 feet on the escarpment. Of the loan villages, Ayalabe, Giyekrun Lambo, Bashay, Giyekrun, Arusha were members of the North Iraqw Cooperative Society (NICS). The extensive experience with cooperatives was one of the original reasons for placing SFFCLP in the area. The area is very rich, as evidenced by the fact that six village chairmen or secretaries and 14 farmers in the sample owned their own tractor(s).

Control Villages

Kilimamamoja lies 12 miles from Karatu down the escarpment with a population of 1,746. The village shamba has 27 acres of wheat and 5 acres of maize planned for 1977/78. Farms here are reported to be larger than in other villages, averaging 16.2 acres. The village has no bookkeeper and no records except a bankbook.

Table 1. Summary of 1976/77 and 1977/78 Small Farmer Food Crop Loans in Mbulu District

Village	Loaned in 1976/77		Value *	Applied for in 1977/78		Value * T.Shs.
	Wheat Seed (90 Kg bags)	Diesel (200 litre Drums)		Wheat Seed (90 Kg bags)	Diesel (200 Litre Drums)	
Bosodawish	-	-	-	200	20	50,680
Giyekrum Lambo	400	79	109,532	400	100	129,200
Endamararick	-	-	-	100	30	34,620
Kainam Rhotia	380	65	100,732	-	-	-
Slahomo	85	8	19,862	100	20	9,280
Rhotia	263	86	87,762	-	-	-
Giyekrum Arusha	400	63.5	103,550	400	100	129,200
Bashay	400	60	101,288	400	60	110,640
Ayalabe	350	52	88,560	80	57	43,008
Gongali	350	49.25	87,185	400	75	117,600
Endabash	200	23	47,836	-	-	-
Kambi ya Simba	-	-	-	100	50	43,900
Qurus	-	-	-	200	20	29,980
TOTAL	2,828	485.75	746,307	2,480	532	760,208

* without interest

Source: TRDB Arusha

Tloma is a very new village with a population of 450 families split from Ayalabe lying 1.8 miles from Karatu. There is no village shamba. The village secretary has no training. There are no records as the village is very new.

Changarawe's 1234 inhabitants live 8 miles from Karatu but less than a mile from the commercial center of Oldeani. The village population is primarily young as it was formed during Operation Vijiji. The area suffers from severe erosion and land has already become a problem. The village shamba has 14 hectares of maize, 32 of wheat and 5 of sorghum planned for 1977/78, a decrease from the previous season due to land pressure. The village secretary has received on-the-job training from the District Ujamaa and Cooperatives Officer. The books which were audited December 1977 are kept in accordance with the instructions issued by the Prime Minister's Office (PMO).

Endamararick which is 12 miles from Karatu was split from the village of Getamok. It has a population of 2520. Sixty five acres of wheat are planned for the ujamaa shamba this season. The village has a problem of land shortage and is considering restricting animals for that reason. The village bookkeeper was trained by NMC. The village books are kept in accordance with the PMO's instructions but have never been audited.

Endala's 2499 people live 15 miles from Karatu. The track is extremely poor, crossing a seasonal river which sometimes is impassable. There is no village shamba. The village is rarely visited by anyone. Villages claim that surrounding villages have taken all the best land and complain about the land shortage. The village secretary has not been trained nor have the books been audited. Village records consist of the crops sold and money paid by NMC.

Bassodawish is a reasonably prosperous village of 3417, 5 miles from Karatu. The village plans to plant 200 acres of wheat and maize this season. The village has a proposal to select a bookkeeper for training but insists it keeps no records now. This seems doubtful as the author saw adding machine tapes in the village office on an earlier visit. The village does have a bank account.

Loan Villages

Rhotia is 5 miles from Karatu with a supposed population of 2393. Part of the land in the village is farmed by absentee owners who live in Arusha. Some village residents are wealthy enough to maintain a second house in Karatu. The village plans to plant 84 acres of wheat and 10 acres of maize on the ujamaa shamba. The village bookkeeper was trained at the Modern Commercial College in Arusha and the Moshi Cooperative College. The books are kept in accordance with the PMO's directive.

There is no information on their having been audited. Rhotia was refused a loan for this season as it refused to sign a letter of irrevocable authority for the recovery of last season's loan from the NMC Commission.

Kainam Rhotia is 6 miles from Karatu with a population of 1371. The ujamaa shamba is intended to have 100 acres of maize, 350 acres of wheat, 10 acres of beans, and 50 acres of pigeon peas this season. The secretary was trained under NICU and is considered the best in the area. The books which are kept in accordance with the PMO's directives were audited November 1976. Kainam Rhotia decided not to apply for a loan this year as they still have T.Shs. 50,000/= outstanding from last year.

Ayalabe is 1.8 miles from Karatu. Its population is 2032. The village plans to plant an unspecified amount of wheat this season in the ujamaa shamba. The bookkeeper was trained by the District Ujamaa and Cooperative Officer. The books are kept in accordance with the PMO's directives but have not been audited.

Giyekum Arusha is centered around a Catholic Mission 1.8 miles from Karatu. It has a population of 1500. The ujamaa shamba has 60 acres of wheat planned for this season. The secretary has never been trained nor have the books been audited. There is no ledger. Records consist of a cash book, receipts and payment vouchers.

Giyekum Lanbo's 2010 inhabitants live 5 miles from Karatu. The ujamaa shamba will have 100 acres of wheat and 100 acres of maize this season. The secretary has no training. Books are kept in accordance with the PMO's directives but have not been audited.

Bashay, named the best ujamaa village in the region, is 3 miles from Karatu. It has a population of 2212. This season it is planned that the ujamaa shamba will have 83 acres of maize, 489 acres of wheat, 20 acres of beans, 10 acres of groundnuts, 20 acres of improved sorghum, 10 acres of sunflowers, 10 acres of sesame, and 10 acres of ngwara. The bookkeeper has no training. Cash sales are kept in a cash book. Credit sales are kept in a credit notebook. At the time of the survey a DUCO official was trying to audit the books without much success given their confused state. Earlier in the year, the village used an NMC crop buying advance for building a CCM office. When it was explained that this had caused them to default on their TRDB loan, they refunded the money (70,000) from their bank account.

Who are the Loan Recipients?

Villages

It is often the case that development projects are placed where they are expected to succeed, i.e., in areas which are easily accessible and relatively advantaged. The entire North Iraqw loan area is such a place. As a result of TRDB's policy of non-solicitation, the loan villages were self selecting. The villages which requested loans differed from other villages in a number of ways.

One prominent factor was that they had all been registered under the 1975 Villages and Ujamaa Villages Act in time to get a loan. The villages that were registered were the villages which had existed as villages in the past and often had experience in the Cooperative Unions. These villages might well be expected to handle the new loans well. The unregistered villages were primarily new development villages or villages which had been partitioned off of existing villages. However, some older villages, such as Qurus, which was a member of NICS, were unable to participate in the program simply because their registration had not been completed.

Loan and non-loan villages were compared on distance from Karatu visits by Government officials, value of previous loans and grants and total assets, using a Mann-Whitney U test. Loan villages were found to be significantly closer to Karatu than non-loan villages ($p = .021$). The average loan village was 3.3 miles from Karatu; the average non-loan village was 9.0 miles. Villages closer to Karatu were more likely to get the information about loans in the first place. Some of the more remote (relatively speaking) villages had inaccurate or only vague information about loans. In addition to having better access to information, the villages closer to Karatu are relatively advantaged in having lower transport costs for inputs and crops.

Visits by officials are advantageous to villages as it brings in information from the outside and, more important, gives the villages a channel to express their needs. Villages which received large numbers of visits can often expect to get more Government attention and help. Including TRDB officials, loan villages received a significantly greater number of visits by officials than non-loan villages ($p = .015$). When TRDB visits were excluded, this difference disappeared. (Both loan and non-loan villages were visited by TRDB, but loan villages were visited far more frequently as a result of need for loan supervision.) It is possible that controlling for credit supervision visits but not other TRDB visits, the difference might remain. Given the measures used, however, loan villages do not appear to have greater outside contacts as measured by official visits.)

Other studies have shown that there is a tendency for resources to be concentrated in a limited number of villages. Hence villages which had previously received loans and grants might be expected to try to receive them again. It might also be expected that wealthier villages would be viewed as good credit risks. There was no statistically significant difference in the value of previous loans and grants received or in total village assets held by loan and non-loan villages.

The greater distance from Karatu disadvantages non-loan villages, as they are more difficult to get to, a problem which is increased by the limited number of TRDB personnel and the less than adequate general information system.

Table 2

COMPARISON OF THE PERCENT OF BORROWERS AND NON-BORROWERS WHO SELL CROPS

- 9 -

	N	Percent Selling Wheat	t	Percent Selling Other Crops	t	Percent Selling Any Crop	t
Borrowers	78	85	9.30 ***	40	3.26 **	90	
Non-Borrowers in Loan Villages	67	24		64		78	
Non-Borrowers in Loan Villages	67	24		64		78	
Non-Loan Villagers Excluding Kilinamoja	121	2		45		45	

* Significant at .05

** Significant at .01

*** Significant at .001

A comparison of the percent of borrowers and non-borrowers who sold crops is presented in Table 2. The percent who sell in loan villages is significantly greater than the percent in non-loan villages. It would be consistent with the data to say that while agriculture in the area as a whole is commercialized, it is far more commercialized in the loan villages.

It should also be noted that a significantly higher proportion of non-borrowers in loan villages sold wheat than non-loan villagers. This may suggest either that the loan villages are more suitable to wheat production by increasing the total resources available for that production.

Because three villages were three kilometers or less from developed commercial centers, it proved meaningless to compare loan and non-loan villages on a scale of commercial differentiation. However, a rough measure of prosperity can be made from the commercial and social institutions supported by or accessible to a village. In these terms, from the author's field observations, it can be said that, while some of the prosperous villages did not receive loans, none of the poorer villages received loans. Loans tended to go to the more accessible, more affluent villages.

Individuals ^{1/}

In the discussion which follows, non-loan villagers refers to farmers living in villages which did not get loans. Non-borrowers, except when modified, refers to all those who did not get loans, both non-loan villagers and non-borrowers in loan villages.

Within the loan villages there was a tendency for loans to benefit people with economic or political power. Leaders who constituted 6.9 percent of the households received a disproportionately high 16.4 percent of the loans ($t = 6.31$, significant at the .001 level). It is this group which determines who gets a loan (clearly not to their own disadvantage).

As can be seen in Table 3, borrowers tended to be wealthier than non-borrowers in loan villages in terms of possessions of durable goods and acreage, a traditional measure of wealth in agrarian societies.

Borrowers were also compared to non-loan villagers to see if there were any differences. There was no statistically significant difference in possessions held by the two groups. There was a highly significant difference between the acreage held by borrowers and that held by non-loan villagers, excluding Kilimomoja. ^{2/}

Table 3.

Comparison of Borrowers and Non Borrowers on Measures of Wealth

	<u>Possessions Score</u>	<u>Total Cropped Acreage</u>
Borrowers	10.38	6.82
Non-Borrowers in Loan Villages	8.03	3.93
	$t = 1.97^*$	$t = 5.35^{***}$
Borrowers	10.38	6.82
Non Loan Villagers	10.10	5.62
	$t = .19$ n.s.	$t = 1.09$ n.s.
Borrowers	-	6.82
Non-Loan Villagers excluding Kilimamoja	-	3.44
		$t = 6.44^{***}$
Non-Borrower in Loan Villages	8.03	3.93
Non-Loan Villagers excluding Kilimamoja	8.83	3.44
	$t = .51$ n.s.	$t = 1.02$ n.s.

N = 78 borrowers, 67 non-borrowers in loan villages, 146 non-loan villages (121 excluding Kilimamoja)

* significant at .05 level

*** significant at .001 level

n.s. not significant

The question of acreage is extremely important. While there is no statistically significant difference between the two groups who did not receive loans, borrowers have approximately twice the acreage of non-borrowers. The distribution of total holdings is presented in Figure 1. The holdings of non-borrowers cluster around three acres and less. Three acres has generally been chosen as the minimum adequate holding in villages where there has been land redistribution. This appears primarily to be devoted to subsistence production. For example, in Bashay, the only wheat growers were men who had three or more wives and thus were allotted three extra acres. Thirty-one percent of the non-borrowers had less than the minimum holding of three acres. Many non-borrowers said they were afraid to take a loan as the amount of land was insufficient for wheat production. If they had a larger acreage, they would grow wheat, they said. But with a small acreage they were afraid their yield would be insufficient to repay the loan. Failure to repay, they thought, would result in their being taken to court and/or to jail.

In contrast, the holdings of the borrowers fall between five and ten acres. The sole borrower who had less than three acres was an absentee farmer from Arusha.

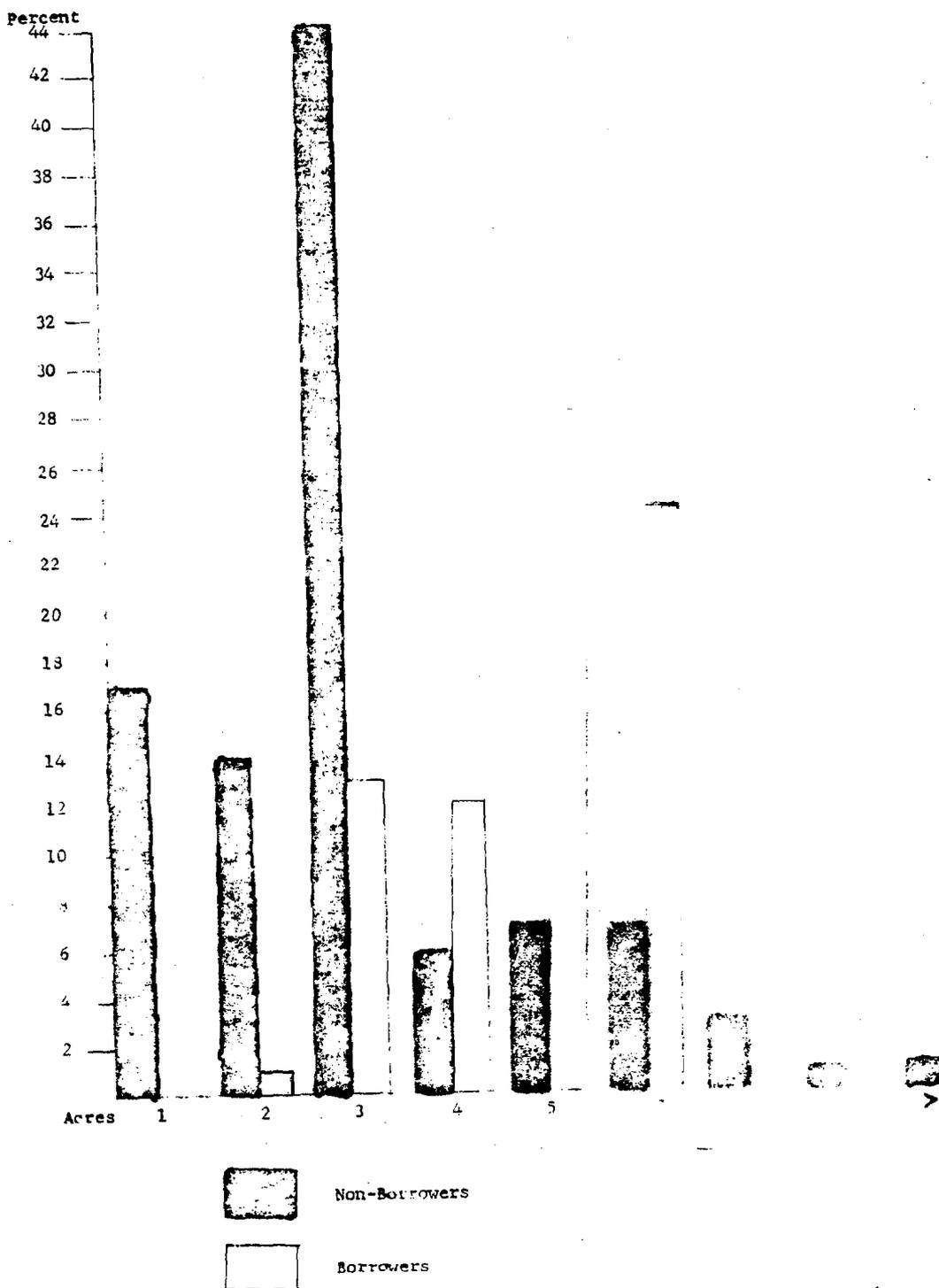
It appears that it is this extra acreage which allows the borrowers to take advantage of the loan program. Whether the fears of the smaller producers are well grounded or not is not clear. However, at the moment, the loans are clearly going to the larger producers. It should be noted that in terms of the program mandate of serving farmers with 20 hectares or less, the program has succeeded in reaching the smaller farmer. However, according to the Agricultural Census the average Tanzanian holding is 1.20 hectares (2.95 acres). In Arusha Region (where the survey was carried out) the average is 1.74 hectares (4.28 acres). Hence, in terms of Tanzanian realities, it is the larger farmers who are being reached.

A comparison of the farming practices of borrowers and non-borrowers is presented in Table 4. There was no statistically significant difference in the use of tractors for cultivating crops other than wheat. Eighty-seven percent of the borrowers and 73 percent of the non-borrowers cultivated with a tractor. Only 7.6 percent of the borrowers and 15 percent of the non-borrowers cultivated with a jembe in distinct contrast to other areas of Tanzania where most cultivation is done with a jembe.

There were highly statistically significant differences in the use of other improved farming practices -- use of fertilizer, insecticide, herbicide, or improved seed for any crop. (Only the use of improved seed could be accounted for by the TRDB loan.) In general, borrowers appeared to be more progressive farmers as measured by these practices.

It is often the case that progressive farmers or farmers who are willing to take loans are better educated or have more extensive contacts with Government officials, such as extension agents, than do other farmers. There was no statistically significant difference in education between borrowers and non-borrowers as can be seen in Table 5. Extension contact is

Figure 1. Comparison of Acreage Distribution Among Borrowers and Non-Borrowers



78 Borrowers, 198 Non-Borrowers (Excludes Kilimamoja)

Table 4. Comparison of the Farming Practices of Borrowers and Non-Borrowers

	Borrower	Non-Borrower	χ^2
Use tractor for non-wheat cultivation	68	157	5.91 n.s.
Other only	10	56	
Use Fertilizer	30	36	15.31***
No	48	177	
Use Insecticide/Herbicide	71	101	44.92***
No	7	112	
Use Improved Seed	78	64	111.82***
No	0	149	

N = 78 Borrowers, 213 Non-borrowers

*** significant at .001

n.s. not significant

presented in the same Table. There is no statistically significant difference between borrowers and non-borrowers in loan villages. The statistically significant difference between borrowers and non-loan villagers is largely due to the accident of Bwana Shamba residence. There are only five Bwana Shambas in all of Karatu sub-district. Some villages have not seen a Bwana Shamba for two or more years, which accounts for the generally low nature of the scores. (The average borrower score, for example, could indicate one regular contact, such as listening to Mkulima wa Kisasa every day, or five kinds of extension contact (attending meetings, etc.) less than twice a year.) The relatively higher scores of non-loan villages stem from Changarawe, which has a resident Bwana Shamba. Loan village scores would be even lower were it not for Bashay, which appointed its own volunteer Bwana Shamba.

Comparison of mean agricultural sales by borrowers and non-borrowers is presented in Tables 6, 7 and 8. It is quite probable that these figures are underestimates. Since only aggregate sales records were available, it was not possible to check the data. However, since the largest underestimates are likely to be made by the larger producers, more accurate data would most probably increase the differences reported.

A primary message of these tables, as with Table 2, is that agriculture in the area is highly commercialized. A rough comparison to the average can be made by using per capita income figures. The average per capita income in Tanzania is around \$135, or roughly Shs. 1080. The average proceeds from the sales of both wheat and non-wheat crops taken separately, as well as total sales, is higher than that. Even when non-sellers are included the average earnings from total agricultural sales exceed the average national income. Sixty-eight percent of the borrowers, thirty-five percent of the non-borrowers in loan villages, and fourteen percent of non-loan villagers actually exceeded this figure. Assuming an average family size of five, this means a per capita income from agricultural sales of approximately Shs 509 for borrowers and Shs 240 for sellers. According to the 1969 Household Budget Survey: Vol. I (Government Printer, Dar es Salaam), rural per capita income is approximately 76 percent of the national average. Hence, the average rural per capita income can be assumed to be around 820 shillings. Borrowers who sold agricultural produce thus received 62 percent of the average income from such reported sales alone. Their actual income can be expected to be higher due to underreporting of sales and to other sources of income. Non-borrowers received 29 percent of the per capita income from sales alone. It should be remembered that average rural per capita income is driven up by the wages of rural laborers, which are regulated by the Government. Thus, compared to other farmers, the Mbulu farmers are probably doing very well indeed.

As can be seen in the tables, borrowers' sales average about twice that of non-borrowers, most of the difference being accounted for by wheat sales. Wheat sales and total sales of borrowers are statistically significantly greater than those of either group of non-borrowers. There was no statistically significant difference in the sales on non-wheat crops.

Non-borrowers in loan villages and non-loan villagers did not statistically significantly differ in possessions, acreage, non-wheat sales or total sales. They did differ significantly in wheat sales, suggesting that loan villagers were perhaps more suited to wheat production than non-loan villages, possibly due to the land availability and soil quality, or that perhaps the availability of inputs through the program facilitated production.

Table 5. Comparison of the Mean Education and Mean Extension Contact of Borrowers and Non Borrowers

	<u>Education (Years)</u>		<u>Extension Contact</u>	
Borrowers	2.24	t = 1.33 n.s.	5.40	t = 0.57 n.s.
Non-Borrowers Loan Villages	1.81		6.00	
Borrowers	2.24	t = .57 n.s.	5.40	t = -2.21*
Non-Loan Villagers	2.05		7.23	

N = 78 Borrowers, 67 Non borrowers in Loan Villages, 146 Non loan Villagers

n.s. = not significant

* significant at the .05 level

Table 6. Comparison of Mean Agricultural Sales by Borrowers and Non-Borrowers in Loan Villages (Shillings) 1977

	SELLERS			ENTIRE SAMPLE		
	Borrowers	Non Borrowers	t	Borrowers	Non Borrowers	t
Wheat Sales	2037	1484	.98 n.s.	1723	354	4.94**
Non-Wheat Sales	1416	1130	.69 n.s.	563	725	.70 n.s.
Total Sales	2547	1391	2.44*	2286	1080	2.93**

N = 78 Borrowers, 67 Non-Borrowers

* significant at .02 level

** significant at .01 level

n.s. not statistically significant

Table 7. Comparison of Mean Wheat Yields Obtained by Borrowers and Non Borrowers 1977 (90 kg bags per acre)

	Mean Yield	t
Borrowers	5.99	
Non-Borrowers in Loan Villages	6.02	- .03 n.s.
Borrowers	5.99	
Non Loan Villagers	6.92	- 1.03 n.s.

N = 78 Borrowers, 18 Non Borrowers in Loan Villages, 13 Non loan villagers

n.s. = not significant

Table 8. Comparison of Mean Agricultural Sales by Non Borrowers in Loan and Non-Loan Villages (Shillings) 1977

	SELLERS			ENTIRE SAMPLE		
	LOAN VILLAGE	NON LOAN VILLAGE	t	LOAN VILLAGE	NON LOAN VILLAGE	t
Wheat Sales	-	-	-	354	78	2.81**
Non Wheat Sales	1130	1443	.95 n.s.	725	656	.34 n.s.
Total Sales	1391	1615	.62 n.s.	1080	734	1.44 n.s.

N = 67 Loan village non borrowers, 121 non loan villagers excluding Kilimamoja

** significant at .01 level

n.s. not significant

The data presented would tend to indicate that, although borrowers are far from homogeneous, they tend to be wealthier, larger and more progressive farmers than non-borrowers. In terms of Tanzanian realities to call the program one for small farmers is something of a misnomer even though it falls within the 20 hectare mandate. It is clearly serving commercial farmers in Mbulu. However, it is important to consider whether this may be necessary if the national goal of increased wheat production is to be met. It is necessary that an economic analysis be done to determine the minimum economically viable acreage which can support wheat production. It may well be the case that the program is serving the smallest farmers it is feasible to reach. It may be that to reach the smaller farmers another crop must be supported. There are plans to expand the Mbulu program to include maize, which might encompass the smaller farmers.

If there is a minimum viable wheat acreage of three acres, the program may be of limited value in villages experiencing land pressure. As land surveys are not yet completed for all villages, there are no data available to determine the extent of the land pressure. However, this was reported as a problem in some non-loan villages and should be explored further.

REPAYMENT

The Achilles heel of any loan program is repayment. SFFCLP in Mbulu is no exception. Asked what the major problem in the program was, a TRDB official replied, "Our biggest problem is that the farmers are doing their level best to default."

Loan recoveries as of March 10, 1978 for the 1976/77 season loan are presented in Table 9. Kainam Rhotia and Rhotia account for 76 percent of the arrears. These two villages, plus Endobash, account for 96 percent of the arrears. The recovery rate as of 10 March was 83 percent.

Loan recovery was intended to facilitate by deducting loan payments when the crop is sold. A number of factors reduce the effectiveness of this method. Some farmers sell the loan inputs to raise ready cash (the loans come at a time when cash is short) and subsequently have no crop to sell. Others take only diesel as a loan and use it to cultivate other crops. Tractor owners take their payment in bags before the produce goes to NMC. Poor crops reduce the amount for sale. Some inputs are given to people in other villages who sell through their own village where there is no recovery process. A very common practice is to sell one's crop through a friend to avoid the loan deduction.

Field observations indicate that in many cases the ability to repay exists but that some villagers feel that TRDB is violating the Government policy of free handouts by insisting on repayment. Defaulting for some has almost become a matter of principle.

This is a problem encountered again and again in credit in Tanzania. ^{3/} During the period of settlement schemes and the early ujamaa villages, large grants were made and loans forgiven. Again during the Kilimo Cha Kufa na Kupone campaign of 1974/75 inputs were given out free. These practices have engendered the expectation that if one just waits long enough any loan will turn into a grant.

Table 9. 1976/77 Loan Recovery as of March 10, 1978

Village	Loan	Amount Recovered	Balance (%)
Giyekrum Lambo	118,842.25	116,566.10	2,276.15 (2)
Kainam Rhotia	109,061.00	59,030.50	50,030.50 (46)
Slahamo	21,550.30	21,550.30	-- (0)
Rhotia	95,221.80	39,734.25	55,487.55 (58)
Giyekrum Arusha	112,351.75	112,251.75	100.00 (1)
Bashay	110,000.00	110,000.00	-- (0)
Ayalabe	96,087.10	96,087.10	-- (0)
Gongoli	94,595.75	91,187.35	3,408.40 (4)
Endabash	<u>51,902.10</u>	<u>23,814.00</u>	<u>28,088.10 (54)</u>
TOTAL	809,612.05	670,221.35	139,390.70 (17)

Note: The figures for Kainam Rhotia and Bashay vary from source to source, possibly due to rounding. The figures in this table were obtained from the Arusha TRDB office on 10 March, 1978.

On March 16, a meeting of the general managers of the District Development Corporations concluded that TRDB should drop its interest rate from nine to between four and five percent. The TRDB representative said that the 9.2 million shillings arrears was due not to an overly high interest rate but to mismanagement on the part of the DDCs. (Daily News 17 March, 1978)

Such attitudes lead to astonishment or bitterness when repayment is insisted on. One well-educated woman said in total amazement, "they never told us we couldn't get another loan until we repaid the first." Others express the opinion that they should not have to repay a wheat loan from the proceeds of another crop. One village has locked horns with TRDB over repayment and refused outright to sign the letter of irrevocable authority. The village feels that it has been badly treated by TRDB.

At the opposite end of the spectrum from the dedicated defaulters are those who make a sincere effort to repay. The village of Kainam Rhotia did not apply for a loan this year as it has 50,000 outstanding from last year. Its expressed intention is to repay from this year's crop proceeds. Another village did not apply for a loan because they said they would feel obliged to sell their food to repay the loan should the wheat crop fail. Many farmers said they were afraid to take a loan lest they be put in jail if their crops fail and they cannot repay.

On average, the repayment record is not much different from and somewhat better than other Tanzanian loan programs. Due and Miller found returns for seasonal tobacco loans to be 89 percent and for all loans, 83 percent in Iringa for 1973 and 1974. Mbeya tobacco had 100 percent repayment but communal food crop loans had only a nine percent repayment rate.^{4/} The National Maize Project loans in Arusha Region still have a significant percent in arrears.

On the other hand, the repayment rate is insufficient to allow recovery of the money loaned, let alone to cover inflation or administrative costs. It remains to be seen whether the tough stance taken this year will result in a higher repayment rate next year.

Financial Feasibility

Little attention appears to have been paid to whether the program can be self-sustaining or not. According to Joe Lieberman, REDSO, economist, the present interest rate requires a recovery rate of roughly 90 percent. This has not been achieved.

Three courses of action are possible. Lower TRDB's administrative costs. Raise the recovery rate. Raise the interest rate (which, at this time, is contrary to Tanzanian Government policy.)

The first option is beyond the scope of this study but should be considered within TRDB. TRDB's efforts to achieve the second option have been discussed. The third option, were it to be permitted, has several ramifications.

At the present interest rate the peasant producer can easily repay the loan. Production costs, excluding labor, for an acre of wheat are as follows:

Seed	103/50	(approximately 10 percent of the acreage is hand sown, which requires Shs. 207 in seed.)
Tractor	100/-	(or diesel, 46/40 plus operating costs)
Herbicide	15/95	
Combine Harvesting	120/-	
	<u>339.45</u>	

Assuming that all inputs were procured from TRDB (which they are not) at 8.5 percent interest, the maximum cost per acre would be 368/30. At the 1977/78 price of 125/- per bag, and at an average yield of 5.99 bags per acre (the average yield reported by borrowers), this leaves a profit of 409.30. At an average yield of 10 bags per acre the profit would be 910/55 per acre.

The questions which must be explored are whether an interest rate which would make the program self-sustaining can be supported by the proceeds from wheat and whether the farmers would be willing to take a loan at such a rate. As the alternative the possibility of using the loan program as a subsidy for encouraging wheat growing could be explored. If this is, in fact, the function of the program it should be done knowingly.

There is some feeling already that the production costs are higher than the benefits. One respondent elaborated at length.

"My son, wheat is the most expensive crop to maintain. Right from the beginning, when you prepare your farm, first of all you have to pay Shs. 100/- for cultivation per each acre of land to the tractor owner. I mean hiring rate for a tractor is Shs. 100/- per acre. Suppose you have 6 acres of land for cultivation, it means you have to pay Shs. 600/- for the 6 acres.

- | | | |
|--------------------------|-------------------------|-------|
| 2. Planting by machine | 50/- per acre | 300/- |
| 3. Insecticides/Fenester | | 200/- |
| 4. Watchman (for birds) | | 200/- |
| 5. Harrowing | 100/- acre | 600/- |
| 6. Combine Harvester | 120/- acre | 720/- |
| 7. Transportation | 2/- bag at 10 bags/acre | 120/- |

If you add up the expenses involved plus compulsory contributions, the total comes to 2,500/-."

The arithmetic is off, underestimating without the contributions, and the gross return would be Shs. 7500/-. Nonetheless, the attitude is indicative.

Difficulties in Program Operation

Information

TRDB's policy of not soliciting loans has to some extent resulted in an information vacuum. Villagers are unsure of how or when or where to apply for loans. One village applied to NMC for a food crop loan. Some individuals said they were going to apply to TRDB for large loans for private farm development. Others were talking about applying for a loan in early March, a time when planting had already begun. Part of the villager's complaints about timeliness of input arrivals are a function of their own last minute loan applications.

Issuing a set of clear instructions on how to apply for what kind of loan would not necessarily constitute solicitation and might eliminate much of the confusion. Such instructions could be circulated through TFA and NMC which have contacts with most villages.

TRDB Administrative Difficulties

Transport is the eternal problem. At one point the credit supervisors had a motor bike which they would take by truck to Karatu and then use for travel to the villages. The motor bike has since died of improper maintenance (at least in part due to faulty maintenance instructions). This greatly reduces the ability of TRDB personnel to get to the field.

The role and effectiveness of credit supervisors is unclear, particularly given the problems of transport.

During the survey it became obvious that none of the interviewers (all of whom were credit supervisors) had a complete understanding of how to do the balance sheet which is part of the standard loan application form. It would seem that if these forms are to have any meaning, thorough field training in their use must be given.

Leaders in five villages reported that the credit supervisor came once a month (although one interviewer reported that he actually came only once in three months). The sixth village said they had been visited twice last season. When asked what advice or assistance the credit supervisor had given, leaders gave the following answers:

Helped record loans properly	1
Helped with application	1
Offered help to bookkeeper	1
Helped with input transport arrangements	2
Gave farming advice	3
Urged repayment	2
Told to use loan for intended purposes	1

The efforts of the TRDB credit supervisors are supplemented by NBC personnel in Karatu. It is intended to have credit supervisors in the field to ensure that loan inputs are used as they are intended. This is a rather massive job for two individuals to undertake. The likelihood of its success seems small unless the effort goes into helping villages do their own enforcement. Credit supervisors might be of use during harvest season to help village secretaries collect loans. Probably the most important task of the Credit Supervisor would be to strengthen the village loan administration effort, including the problems outlined in the next section. Not only could the Credit Supervisors help with setting up accounting, dispersal and collection systems for the village, per se, but they might help individual farmers develop basic bookkeeping skills and the ability to judge whether a loan makes economic sense for them.

Village Problems

Much of the loan administration is actually done by the villagers who are responsible for any lending and collection of loans. In two villages the village council is responsible for this. In one village it is the assistant secretary and chairman. Elsewhere it is the loans committee or the farming committee. No specific information was available from the sixth village but the secretary was responsible for collecting the loans. Although only three of the secretaries had bookkeeping training loan records were reported to be adequate in five of the six loan villages.

Leaders in two villages reported no problem in loan distribution. Two complained about late arrival of inputs, including the problem of lack of hard cash for meeting transport expenses. One had a problem of demands for loans exceeding the supply. Another said that loans were used for other purposes. Three villages mentioned problems collecting loan repayment.

What does the Program Accomplish?

Without baseline data it is impossible to make an evaluation of the effect of the program. However, some preliminary observations can be made.

One argument which might be made for the program is that it allows farmers to obtain inputs which help them to get better yields. Available data would indicate that this is not the case. A comparison of mean wheat yields obtained by borrowers and non-borrowers is presented in Table 10. There is no statistically significant difference between borrowers and non-borrowers. The higher yields achieved by non-loan villagers, while not statistically significant, deserve some explanation. In non-loan villages, it was only the larger and better farmers with more resources who grew wheat. (Seven of the ten largest wheat growers were non-loan villagers) In loan villages, on the other hand, while loans tended to go to larger, more progressive farmers, they also went to some poorer farmers. The diversity of the borrowers made their average yield less impressive than that of the uniformly good non-loan village wheat growers.

It should be pointed out that the yield data are most likely underestimations. Different sources give different estimates of yield. The DADO estimates the average yield to be 7 - 8 bags per acre. TRDB uses 5 bags per acre in calculating loan feasibility, but assumes the typical farmer and the usual ujamaa shamba gets 6 - 8 bags on the average. TRDB officials say that up to 10 bags per acre on ujamaa shambas and up to 15 bags on private shambas can be expected. A local farmer in informal conversation claimed that even last year, which was a dry year, 10 bags an acre was the minimum yield. It is clear that some means of verifying yield (such as sample cutting) must be used if program evaluation is to be meaningful.

A second justification for the program might be that it meets a critical need by functioning as an input supply program. Mbulu, however, is as Karatu is the site of a TFA branch where farmers can buy inputs, including diesel. Non-borrowers last season, for the most part, secured their inputs from TFA. Those who are dropping out of the program this season are doing likewise and also using seed saved from last year.

For the most part the program appears to be a convenience for farmers who thus avoid saving for and procuring inputs on their own initiative. Many of those who are truly unable to procure inputs on their own seem not to use the program as they fear they will be forced to default either by bad weather or the small size of their holding. This raises questions about the efficacy of the program in expanding wheat production. In order to determine to what extent the extension of credit is sufficient to increase wheat production, it is necessary to do an economic analysis of wheat production and to compare production figures over time. In this way the significance of problems such as weather and land shortage and the degree to which the program is reaching those who actually need credit can be established.

One indication of program attractiveness is the turnover rate. Forty-one percent of the borrowers said they did not want a loan next year. It is possible that one year's loan enabled them to establish an independent base. Sixteen percent of the non-borrowers reported they were going to apply for loans next year (but only 11 percent of these were for crop loans. Three villages dropped out of the program and four new villages joined the program. Thirty percent of the loans were to be for new houses.

Table 10, Comparison of Mean Wheat Yields Obtained by Borrowers and Non-Borrowers 1977

(90 Kg. Bags per Acre)

	<u>Mean Yield</u>	<u>t</u>
Borrowers	5.99	
Non-Borrowers in Loan Villages	6.02	- .03 n.s.
Borrowers	5.99	
Non-Loan Villagers	6.82	- 1.03 n.s.

N = 78 Borrowers, 18 Non-borrowers in Loan villages, 13 Non-loan Villagers

n.s. = not significant

Table 11. Responses to What Do You Need a Loan for?

	Borrowers	Non-Borrowers*
Yes	6	4
Wheat Production	15	1
Improve Agriculture	31	52
Tractor	3	0
Diesel	5	0
House	1	15
Cover previous year's losses	1	0
Water	0	0.4
Maize	0	1
Livestock	0	8
No	38	31

* Sums to more than 100 percent due to multiple responses.

The general need for loans expressed by borrowers and non-borrowers is summarized in Table 11. Around a third of the sample felt no need for loans at all, including 38 percent of the borrowers. Among the two-thirds who expressed a need for loans, loans for general agricultural improvement and inputs for wheat production were the greatest needs among borrowers; general agricultural improvement and housing, among non-borrowers.

The SFFCLP has set up a method which allows village farmer credit to be extended and recovered. The recovery rate hopefully will show some improvement in the next season. As a "food crop" loan program the project operates under certain constraints. What allows the loan program to function is that repayment can be forced by control of the market. In the case of Mbulu, wheat enters this market as the Irawq are maize - not wheat eaters. If the program were concerned with a local food crop which enters the market to a far lesser extent than does a food-cash crop, a reasonable recovery rate would be far harder to achieve. It is the concentration on food-cash crops which allows the program to function.

1/ Women received 10 percent of the loans. The number of female heads of households was estimated to be 6 percent of total households. This does not necessarily mean that women benefited disproportionately from the program. Women loan recipients constituted 8 percent of the sample. Half of these were not heads of household.

2/ Kilimamoja was excluded from the analysis because its reported average acreage, 16.2, was substantially higher than the other villages. This could be due to biased sampling or untruthful respondents. It could also be due to Kilimamoja's location farther down the escarpment from the other villages. It is possible that there is simply more land available to Kilimamoja farmers. As the survey of village land had not been completed, it was impossible to verify this speculation. Analysis of sales also excludes Kilimamoja as sales are in part a function of acreage.

3/ A. T. Mohele, 1975. "The Ismani Maize Credit Programme" ERB Paper 75.2 University of Dar es Salaam describes similar feelings that all Government assistance should be free. In that case the villagers finally, under duress, pledged to repay 16 percent of the loan.

4/ Due, Jean M. and Wayne Miller, 1977. Agricultural Credit in Tanzania. Illinois Agricultural Economics Staff Paper 77-E-15 (Urbana-Champaign).