

PREFACE

ATIP Progress Reports are prepared and circulated to make ATIP research findings easily available to GOB personnel and researchers interested in Botswana farming systems. These reports are not subject to professional review. Therefore, data and findings presented in the Progress Report series may be subject to further revision. Any interpretations or conclusions presented in progress reports do not necessarily reflect the views of the Department of Agricultural Research, ATIP, USAID or MIAC.

This progress report gives an overview of revenue and expenditure patterns during the 1984-85 cropping season. The data were collected through a series of monthly visits to the ATIP cooperators in Shoshong and Makwate village. The analysis covers the frequencies of various types of transactions, as opposed to levels of expenditures and revenues. The frequencies of expenditures on grain and other foods are disaggregated by village, gender of household head, cattle wealth, and period of the year.

The paper shows that revenue transactions actions took place less often than did expenditure transactions, highlighting the importance of household cash management. In contrast to earlier research on cashflow patterns, there were relatively minor differences in the frequencies of transactions by village or household type.

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The ATIP cooperators made the analysis possible through their time and cooperation.

FREQUENCIES OF CASH TRANSACTIONS IN SHOSHONG AND MAKWATE:

FINDINGS FROM THE 1984-85 ACTIVITY SURVEY

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1. INTRODUCTION

Most Botswana households are unable to meet their food requirements through household production. Consequently, households have diversified strategies for generating income and securing their household needs. As a result, ATIP farming systems diagnosis included research on cash revenues and expenditures in order to:

- (a). Clarify the role of crop production relative to other cash income sources
- (b). Assess the importance of food purchases and input expenditures relative to other expenditures

A preliminary profile of the relative importance of cash income sources was generated through the 1983 Crop Management Survey. Data on cashflow levels were collected from a small sample of 27 households through the 1983-84 MVRU Survey. Results from both surveys were presented in ATIP Research Report Number 1.

During the 1984-85 season, information on the frequencies of various revenue and expenditure transactions were collected through the Activity Survey. The objective was to examine differences in the frequencies of cash transactions by period, village, gender of household head, draught access, and cattle wealth. This information is useful in evaluating patterns of participation in the cash economy. It also helps in distinguishing between frequent and infrequent expenditures and revenues, as these affect farm-household planning.

This progress report briefly reviews findings from the first two surveys and then summarizes results from the Activity Survey.

2.1 REVIEW OF PREVIOUS FINDINGS

2.1 Sources of Cash Income, 1983

The 1983 Crop Management Survey confirmed that there were several sources of cash income. Crop production played little or no role in generating cash income. In fact, very few respondents said crop sales were a source of cash income at all. Selling cattle was the main cash income source. Following cattle sales, selling beer, remittances, and village wage employment (in that order) were ranked as the principal sources of cash income.

The survey revealed several differences in the relative importance of cash income sources by village and household type. Cattle sales were particularly important for male-headed and cattle-rich households. Female-headed and cattle-poor households primarily relied on beer sales and remittances. Remittances were the primary income source for draught-dependent households.

2.2 Cashflow Analysis, 1984

The cashflow analysis confirmed that livestock sales were the single largest source of cash income while crop sales provided very little cash income. Beer sales provided a substantial source of cash income, particularly for female-headed households in Shoshong. Gifts and loans, primarily remittances from non-resident household members, were a large source of cash for most households.

Turning to cash outflows, purchases of grain and meal, other food and households goods were substantial for all households. Relatively little was spent on inputs and livestock. The largest arable farming expenditure was for traction hire. The total level of expenditure in Makwate was only a third of that in Shoshong. Poorer households spent just over half of that spent by the richer households. There was surprisingly little difference in expenditure patterns by male-headed versus female-headed households, despite a large difference in revenues. An analysis of cashflows by month showed that beer revenues and expenditures on grain, other food and households goods were quite regular. Cash revenues from livestock sales were concentrated in late summer.

3. FREQUENCIES OF TRANSACTIONS, 1985-86

In the Activity Survey, respondents were asked on a monthly basis how frequently different transactions had taken place. Categorical responses were recorded, distinguishing between "not at all during the month," "one to three times during the month," "two to three times a week," "four to five times a week," and "everyday or nearly every day." A total of 561 responses were received over a 12 month period for each of 16 revenue and expenditure categories, for an average of just under 47 households per month.

3.1 Profile of Revenue and Expenditure Transactions

Findings on the frequencies of different transactions over the entire 12 month are given in Table 1.

TABLE 1: OVERVIEW OF TRANSACTION FREQUENCIES

		NOT AT ALL	LESS THAN ONCE/WEEK	ONCE/WEEK	MORE THAN ONCE/WEEK
		(Percent of Household-Months/a)			
<u>REVENUES:</u>					
<u>SALES:</u>	Crops	98	1	<1	<1
	Animals	77	22	<1	<1
	Beer	61	34	3	3
	Other	98	2	0	0
<u>MISCELLANEOUS:</u>	Gift/Loan	78	22	<1	0
	Wages	64	34	1	2
<u>EXPENDITURES:</u>					
<u>PURCHASES:</u>	Inputs	38	62	<1	<1
	Grain/Meal	15	58	14	13
	Other Food	7	47	24	22
	Animals	94	6	0	0
	HH Goods	24	54	11	11
<u>MISCELLANEOUS:</u>	Gift/Loan	92	6	1	1
	Wages	79	21	<1	0
	Transport	47	38	12	2
	Services	61	37	2	1

a. Percentages are calculated on the basis 561 responses for each activity, an average of 46.8 responses per month.

Expenditures for grain and meal and for other food were the most frequent type of transaction. Overall, expenditure transactions took place much more frequently than did transactions resulting in revenues. Except for expenditures on grain or meal, other food, household goods and transport, very few transactions took place more than one to three times a month.

The most frequent revenue transaction was beer selling, followed by wages. Livestock sales and gifts (received) took place in less than a quarter of the household-months.

3.2 Disaggregated Results for Food Expenditures

Because of the frequency and importance of expenditures on food, patterns in the frequencies of these transactions were analysed in relation to period of the year, village and household types. Results are summarized in Table 2.

TABLE 2: FREQUENCIES OF EXPENDITURES ON
GRAIN AND MEAL BY VILLAGE,
HOUSEHOLD TYPE AND PERIOD

	NOT AT ALL	LESS THAN ONCE/WEEK	ONCE/ WEEK	MORE THAN ONCE/WEEK
	(Percent of Household-Months)			
VILLAGE:				
Shoshong	9	63	12	16
Makwate	25	49	16	10
GENDER OF HEAD:				
Male	16	60	13	11
Female	13	54	14	19
DRAUGHT ACCESS:				
Control	16	57	15	12
Dependent	12	60	11	17
CATTLE ASSETS:				
0-35	15	55	16	14
> 35	15	63	9	19
PERIOD OF YEAR:				
Jan. to March	8	68	17	7
Apr. to June	18	60	15	7
July to Sept.	17	58	9	16
Oct. to Dec.	16	47	13	24

No significant differences were identified by household type. There appears to be less of a difference among types of households with respect to the frequencies of transactions than there is in the amount of money spent.

There was a slight difference between the villages in the frequency of grain and meal purchases. Neither grain nor meal were purchased in a quarter of the Makwate household-months compared to less than ten percent of the Shoshong household-months. But in both villages, grain or meal were purchased on a weekly basis or more frequently in only a quarter of the household-months.

TABLE 3: OF
ON OTHER FOOD BY VILLAGE,
HOUSEHOLD TYPE AND PERIOD

	NOT AT ALL	LESS THAN ONCE/WEEK	ONCE/WEEK	MORE THAN ONCE/WEEK
	(Percent of Household-Months)			
VILLAGE:				
Shoshong	7	49	22	22
Makwate	6	43	27	24
GENDER OF HEAD:				
Male	6	47	25	22
Female	8	47	21	24
DRAUGHT ACCESS:				
Control	8	44	26	22
Dependent	5	52	20	23
CATTLE ASSETS:				
0-35	9	44	2	25
> 35	3	52	26	19
PERIOD OF YEAR:				
Jan. to March	9	53	24	14
Apr. to June	7	63	21	19
July to Sept.	8	44	26	22
Oct. to Dec.	4	30	24	42

There also were slight differences in the frequencies of grain and meal transactions at different periods of the year. Grain and meal were purchased in a larger proportion of the household-months during winter and spring than they were during summer.

Overall, the differences in transaction patterns by village, period, and household type appeared to be relatively minor.

3.3 Transactions Patterns

The data in Table 1 refer to transactions frequencies for each revenue and expenditure category taken one at a time. A related issue is whether the patterns of transactions, taken as a whole, differed by village, period, or household types. This issue was assessed by calculating Spearman rank correlation coefficients for the relative frequencies of different revenue and expenditures activities. To calculate the coefficients, the average frequency for each revenue and expenditure activity was calculated for each village, household type and period. The average frequencies were based on the means of the disaggregated categorical values. The average frequencies were then ranked and the Spearman rank correlation coefficients calculated. The higher the correlation coefficient, the more similar are the patterns of revenue and expenditure transactions between compared groups. Results are presented in Table 3.

When revenue and expenditure transactions are combined, there are highly significant correlation coefficients for village, gender of household head, draught access, and cattle assets. Correlations between periods are statistically significant but are lower, suggesting there is variation in the relative frequencies of different types of revenue and expenditure transactions at different periods of the year. The lowest correlation is between the winter months and early summer.

TABLE 4: SPEARMAN RANK CORRELATION COEFFICIENTS
REVENUE AND EXPENDITURE FREQUENCIES

	REVENUES	EXPENDITURES	REVENUES & EXPENDITURES
BY VILLAGE	.90/a	.91	.98
BY HH TYPE:			
Gender of Head	.55	.85	.98
Draught Access	.81	.92	.98
Cattle Assets	.88	.86	1.00
BY PERIOD:			
Months 1-3 v. 4-6	.90	.93	.93
Months 4-6 v. 7-9	.98	.82	.86
Months 7-9 v. 10-12	.95	.62	.69
Months 10-12 v. 1-3	.88	.88	.90

a. Significance levels for the Spearman rank correlation coefficient are as follows:

	Significance = .05	.01
Revenues (6 dof)	.83	.94
Expenditures (7 dof)	.71	.89
Combined (15 dof)	.44	.62

The coefficients for revenue and expenditure transactions taken separately are somewhat less meaningful because they are based on few degrees of freedom. Nevertheless, significant correlations were found for most groupings. In general, the relative frequencies of different revenue transactions were more strongly correlated than were the relative frequencies of expenditure transactions. The lowest correlation was obtained for the relative frequencies of revenue transactions between male and female-headed households. Female-headed households received revenues more frequently from gifts and beer sales than did male-headed households.

4. SYNTHESIS

In contrast to earlier research on primary income sources and cashflows, the analysis of frequencies of cash transactions did not reveal major differences by village or household type. This conclusion holds whether considering specific transaction categories or patterns of transactions taken as a whole.

Somewhat greater differences in transaction frequencies were identified by period of the year. Perhaps most notable is the finding that revenue transactions take place less frequently than expenditure transactions. This indicates there is a need for effective cash management, and highlights the importance of who (within the household) controls the cash resources.