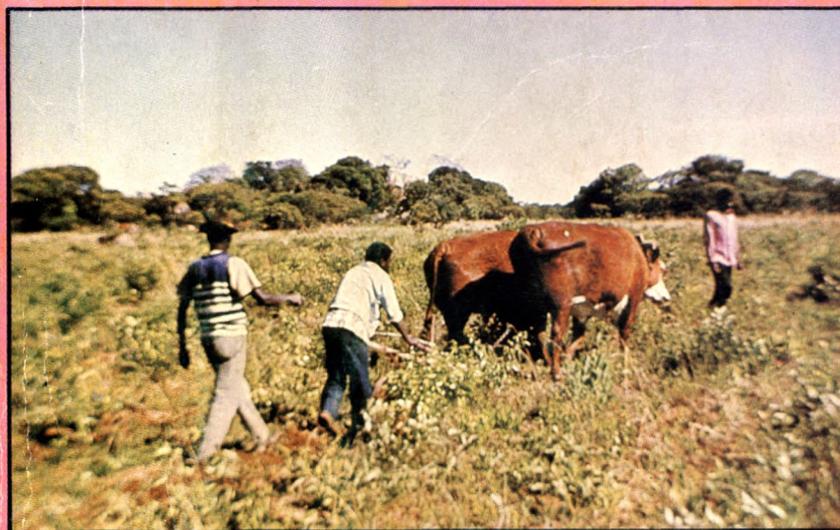# HOUSEHOLD AND NATIONAL FOOD SECURITY IN SOUTHERN AFRICA

Edited by
Godfrey D. Mudimu & Richard H. Bernsten
University of Zimbabwe UZ/MSU Food Research in Southern Africa

HOUSEHOLD AND NATIONAL FOOD SECURITY IN SOUTHERN AFRICA

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FOREWORD

In 1985 the University of Zimbabwe and Michigan State University initiated a Food Security Research Network for Southern Africa. The objectives of the network are to conduct research that informs policymakers about food security issues and to help strengthen the regional capacity for food policy analyis. The underlying premise of the network is that building excellence in research capacity for national policy analysis comes through experience. In practice, this requires a long-term commitment to analytical capacity building, consistency in funding, and constant interaction between researchers and policymakers.

The network has sponsored four annual conferences for network researchers, policymakers, SADCC officials, and representative of international and donor agencies. The aim of the conference is to share research findings, identify new research themes, and provide an opportunity for policy dialogue between regional researchers, policymakers, and government officials.

The 1988 conference brought together 110 participants who deliberated on 28 papers. In the Official Opening, Vice-Chancellor W.J. Kamba of the Univesity of Zimbbawe highlighted the importance of including health related-issues as a component of food security; and Zimbabwe's Senior Minister of Finance, Economic Planning, and Development B.T.G. Chidzero outlined policy reform priorities for Southern Africa. Subsequent sessions focused on *SADCC's Food Security Programme, the Impact of Market Reform on Food Security, Food Security Policy Options, New Technology to Improve Food Security, Family Food Security Options in Low-Rainfall Areas, Expanding Agricultural Trade in the SADCC Region, Nutrition and Food Security, the Contribution of Small-Scale Rural Enterprises to Employment Generation and Food Security, and the Impact of Irrigation on Food Security.*

A highlight of the 1988 conference was the participation of five nutritionists from Zambia, Zimbabwe, Sweden, and the United States. The presence of the nutritionists stimulated formal and informal discussions on the food access side of the food security equation and drew attention to the need to initiate more research in this area.

A second highlight of the 1988 conference was the attention given to reducing barriers to expanded intraregional trade in the SADCC region. Results presented suggest that there appear to be substantial price and nonprice barriers to expanded trade. Nevertheless, there exist significant opportunities for expanding intraregional trade that can be realized through appropriate government initiatives.

This proceeding contains revised papers prepared under the sponsorship of the University of Zimbabwe/Michigan State University Food Security Research Project in Southern Africa and presented at the University of Zimbabwe's Fourth Annual Conference on Food Security Research in Southern Africa, held at the Holiday Inn, Harare, October 31-November 3, 1988.

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GRAIN MARKETING BY COMMUNAL FARMERS IN ZIMBABWE: PRELIMINARY RESULTS FROM MUTOKO, MUDZI AND BUHERA DISTRICTS

Solomon M. Chigume and James D. Shaffer[1]

INTRODUCTION

Approximately 60% of Zimbabwe's total land area and 40% of communal households are in marginal areas in Natural Regions IV and V. Because these areas have poor soil and low and erratic rainfall (averaging 600 mm annually), crop production is a risky undertaking.

Since independence in 1980, the government has sought to both increase the incomes of communal farmers and improve household food security in these areas Zimbabwe, 1983) by encouraging farmers to increase their production and marketing of small grains (sorghum and the millets) and oilseeds (groundnut and sunflower). Several specific policies have been instituted to elicit increased production and marketing of small grains:

o In 1984-85, the government made bulrush millet and finger millet controlled crops, enabling farmers to sell them to the Grain Marketing Board (GMB).

o In the same year, government established an incentive guaranteed price structure for finger millet and bullrush millet. Before 1984, these crops were sold locally and to stockfeeds and brewing companies who were offering an average price of Z$75/mt for bulrush millet and Z$100/mt for finger millet (Meltzer, 1983). However, in 1984-85 the guaranteed minimum price was set at Z$250/mt for bulrush millet and Z$300 for finger millet, representing an average increase of 200% and 240%, respectively.

o Government increased the price of red and white sorghum from Z$80/mt in 1979-80 to Z$180/mt in 1985-86, an increase of 120%.

Additional policies that were not necessarily targeted at small grains, but served to support increased small grains production and marketing included:

o expansion of smallholder credit through the Agricultural Finance Corporation (AFC) for input purchases;

o establishment of GMB depots and collection points throughout the communal areas, which reduced farmers' grain marketing cost;

o construction and upgrading of roads which improved access to markets and reduced transport costs; and

o expansion of the extension services into the communal areas which improved farmer access to technical information.

[1]Food Security research scholar, Department of Agricultural Economics and Extension, University of Zimbabwe; and Professor, Department of Agricultural Economics, Michigan State University.

Aggregate data show that farmers have responded to these policies, with total marketings of sorghum to the GMB increasing from 25,000 mt in 1984-85 to 190,000 mt in 1986-87 (Table 1). For the millets, marketings to the GMB increased from 4,502 mt to 127,000 mt over the same period. Yet, available evidence suggests that increased production and marketings are both concentrated in certain regions; and within these regions, most of the marketed surplus is produced by a small proportion of the households (Stanning, 1987; Rohrbach, 1987).

Paradoxically, while these policies have increased communal marketings, the GMB has been unable to dispose of the marketed surplus, particularly red sorghum, finger millet, and bulrush millet, raising questions as to the sustainability of current pricing policies.

OBJECTIVES OF THIS STUDY

The general objectives of this study are to examine farmer marketing behaviour including crops marketed, amounts marketed, market channels, reasons for selling to each, buyer, and the different farmer grain marketing strategies. The specific objectives of this study are to:

o identify social, economic, and institutional factors which affect the amount of small grains farmers market and/or retain;

o estimate the distribution of benefits, identifying characteristics of households benefiting most from these policies and those not benefiting;

o characterize when, where, and why farmers market their crops;

o evaluate the rationale of farmer market behaviour, especially the timing of sales and market channel used and relate this behaviour to the GMB's marketing practices; and

o identify market problems faced by farmers and identify policy options to relax these constraints.

Table 1. GMB intake and disposal of sorghum and the millets ('000 mt), 1981-87.

Marketing Year	Sorghum			Bulrush millet			Finger millet		
	Intake & stocks	Sales	Closing stocks	Intake & stocks	Sales	Closing stocks	Intake & stocks	Sales	Closing stocks
1980-81	24	20	4	Not controlled			Not controlled		
1981-82[a]	35	19	16	Not controlled			Not controlled		
1982-83[a]	35	27	8	Not controlled			Not controlled		
1983-84[a]	22	18	4	Not controlled			Not controlled		
1984-85	25	14	11	4	0.02	3.98	0.40	0.02	0.38
1985-86	91	34	57	48	0.05	47.95	13.00	0.02	12.98
1986-87[a]	190	22	168	92	0.00	92.00	35.00	0.00	35.00

[a]Drought years
Source: GMB and AMA (various years).

STUDY AREA DESCRIPTION AND
DATA COLLECTION METHODS

The study is located in three districts; Mudzi, Mutoko, and Buhera in Natural Regions III, IV and V. Mudzi and Mutoko Districts are about 140 km east of Harare. Mutoko lies in both Natural Region III and IV, but the sample is located only in Natural Region IV. Annual rainfall averages 450-600 mm, with some occurrences of mid-season droughts. Farmers reported that the 1986-87 season was a drought year in that rains came late and/or came in short intense downpours.

Buhera is located in Natural Regions III, IV, and V and lies roughly 260 km southeast of Harare. However, the survey area is all in Natural region V where average annual rainfall is 350-500 mm. However, there is a high incidence of severe mid-season drought, and 1986-87 was a drought year.

The sample was selected in stages, from the natural region level to the household level. First, Mudzi, Mutoko, and Buhera Districts were chose purposely to represent communal areas in natural Regions IV and V, respectively. In addition to having low rainfall, small grains--the subject of this research--are widely grown in these locations. Next, six villages were selected in each natural region where small grains production was a major enterprise; where oilseeds were also grown; and the distance to the nearest GMB depot varied from a short to a long distance (30 km or more). Finally, 30 households were randomly selected from each village.

RESULTS AND DISCUSSION

The preliminary analysis reported in this paper is organised in terms of several questions that complement the research objectives. Future analysis will explore issues not considered in this paper.

What are the characteristics of farmers who market?
Based on survey results, two groups of farmers were identified. The first group included farmers who sold no crops in 1986-87. The second group included farmers who sold at least one crop. This grouping is justifiable in that most farmers sold only one crop.

Table 2 shows some characteristics of the farmers in these two groups. Overall, there appears to be very little difference between the socioeconomic and resource characteristics of households who marketed and those who didn't market crops. While expected differences, such as farmers who market should have more arable land, hold true in one district (Mudzi/Mutoko), there was no difference in Buhera[2].

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[2]As subsequent analysis will show, most of the farmers who marketed grain, only sold small amounts. Therefore, it is likely that they are not significantly different than those who do not market any crops.

Table 2. Characteristics of sample farmers, who marketed/did not market grain, Mudzi, Mutoko and Buhera Districts, Zimbabwe.

Characteristic	Mudzi/Mutoko		Buhera	
	None	Marketed	None	Marketed
Social				
Characteristics of HH head				
Male (%)	86	87	30	83
Age (mean years)	51	51	48	44
Education (%)				
none	29	33	22	8
1-5 yrs	29	47	45	58
> 5 yrs	42	20	33	34
Literacy				
Shona and English (%)	30	36	44	51
Non-agricultural job (% yes)[b]	17	24	33	29
Off-farm job (% yes)[c]	30	35	53	51
Characteristics of household				
Family size (mean no.)	9	9	11	9
Resident members (mean no.)[a]	5	6	7	7
Composition (mean no.)				
Preschool	0.72	0.89	1.67	1.17
Primary	1.39	1.42	2.06	´2.25
Secondary	0.80	1.20	1.47	1.34
Adults	5.83	5.42	5.72	4.51
Resources				
Total arable land (acres)	2.6	3.1	4.6	4.5
Animal traction status (%)[d]				
Non-equipped	26	11	11	6
Semi or totally equipped	74	89	89	94

[a]Staying at the farm full-time. [b]Handicrafts, blacksmithing. [c]Not on the farm. [d]Non-equipped is without a plough and two draught animals; semi or totally equipped is with at least a plough and two draught animals.
Source: Farmer Survey

What are farmer's objectives in growing each grain crop?
Grain produced by communal farmers in both survey areas is primarily destined for home consumption, but the relative importance of consumption as a primary objective for growing each crop varied by crop (Table 3).

Mudzi/Mutoko District
In 1986-87, the crop that farmers most frequently reported growing only for home consumption was white sorghum (83% of households), followed by red sorghum (78%), bulrush millet (64%), groundnut (59%), finger millet (50%), and maize (39%).

In contrast, 61% of the households reported growing maize for both home consumption and sales, indicating that maize is an important cash crop in the area. Other crops grown for both home consumption and sale are finger millet (43%) and bulrush millet (35%).

Buhera District
Approximately 82% of the households reported they produced maize only for home consumption, followed by white sorghum (79%), red sorghum (58%), finger millet (49%), red sorghum (46%), groundnut (48%), and bulrush millet (32%). In contrast to Mudzi/Mutoko, Buhera farmers prefer to consume the little maize they are able to produce.

In Buhera, bulrush millet is the dominant crop and is regarded as both a food and cash crop, as indicated by the fact that 63% of the respondents reported growing it for both consumption and sale. Other important dual purpose crops are groundnut (47%) and finger millet (38%).

What are the most commonly grown crops?
In order to identify shifts in cropping emphasis, households were asked which crops they grew each year, from 1980-81 to 1986-87[3]

Mudzi/Mutoko District
The most commonly grown crop in 1986-87 was maize (98% of the households), followed by bulrush millet (88%), groundnut (74%), white sorghum (57%), sunflower (47%), finger millet (44%), and red sorghum (26%) as shown in Table 4.

Comparing 1980-81 to 1986-87, the greatest increase in the absolute percentage[4] of farmers growing a crop was for sunflower (+29%), followed by groundnuts (+21%) and maize (+18). For the other crops, the increase in the percentage of growers ranged from 9-14%.

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[3]While information on actual area grown each year would have been a better indicator of changes in cropping emphasis, farmers could not recall area or total production in earlier years.

[4]Calculated as percentage growing in 1986-87 minus percentage growing in 1980-81.

Table 3. Farmers' objectives for growing grain crop (% producers), Mudzi/ Mutoko and Buhera, Zimbabwe, selected years.

Crop	Mudzi/Mutoko[a]			Buhera[a]		
	(N = 110)	(N = 119)	(N = 122)	(N = 124)	(N = 125)	(N = 133)
	1980-81	1985-86	1986-87	1980-81	1985-86	1986-87
Maize						
Consume only	49	6	39	83	84	82
Sell only	1	0	0	1	3	2
Sell and consume	45	64	61	14	12	15
Don't remember	5	0	0	2	1	0
Number[b]	88	112	120	95	115	123
Bulrush millet						
Consume only	69	70	64	24	28	32
Sell only	2	1	1	5	8	5
Sell and consume	25	29	35	68	65	63
Don't remember	5	0	0	3	0	0
Number[b]	88	102	107	107	116	123
Finger millet						
Consume only	54	56	50	46	54	49
Sell only	5	7	7	11	11	13
Sell and consume	29	36	43	31	32	38
Don't remember	12	2	0	11	0	0
Number[b]	41	55	54	35	37	39
Red sorghum						
Consume only	71	66	78	44	46	58
Sell only	7	4	16	19	34	25
Sell and consume	7	10	6	22	17	17
Don't remember	14	0	0	16	3	0
Number[b]	14	29	32	32	35	36
White sorghum						
Consume only	73	86	83	81	78	79
Sell only	2	0	1	2	4	4
Sell and consume	17	14	16	0	11	15
Don't remember	8	0	0	17	7	2
Number[b]	48	70	69	42	46	52
Groundnuts						
Consume only	64	58	59	45	42	48
Sell only	0	0	0	1	2	4
Sell and consume	29	41	41	50	52	47
Don't remember	7	1	0	4	3	1
Number[b]	58	90	90	82	88	98

[a]N = sample size, [b]Number of households growing the crop.
Source: Farm survey, Food Security Research Project.

These results show that maize and bulrush millet are the most commonly grown crops; and that since 1980-81, farmers have diversified their cropping patterns, in terms of the variety of crops grown. Particularly significant is the increase in the percentage of farmers growing sunflower and groundnuts, cash crops well suited for low rainfall areas.

Buhera District
Here, the most commonly grown crops were bulrush millet and maize (92%), followed by groundnut (74%), white sorghum (39%), finger millet (29%), red sorghum (27%), and sunflower (10%) as shown in Table 5.

Comparing 1980-81 to 1986-87, the greatest increases in the absolute percentage of farmers growing a crop was for maize (+16%), groundnut (+10%), bulrush millet (+6%), and white sorghum and sunflower (+5%). For the other crops, farmers reported little or no changes.

These results suggest that maize has become an increasingly important crop in this low rainfall area, even though it is not agronomically suited.

What crops are most often marketed?
While households may intend to grow a crop for a given purpose, the quality of the season--which affects production--may alter his/her intentions.

Mudzi/Mutoko Districts
The most frequently marketed crops in this district (1986-87) were sunflower (41%), maize (26%), bulrush millet (12%), finger millet (11%), and groundnut (10%) as shown in Table 4.

Comparing 1980-81 to 1986-87, the greatest increase in the absolute percentage of farmers marketing a crop was for sunflower (+34%), followed by maize (18%), and bulrush millet (10%). The rest of the crops showed a range of 3-8% increase in the percent of farmers marketing.

Buhera District
Here, the most frequently marketed crop was bulrush millet (52%), followed by groundnut (30%). No other crops were marketed by more than 5% of the households (Table 5).

Comparing 1980-81 to 1986-87, there was a small increase in the absolute percentage of farmers marketing finger millet (+3%), but a decrease in the absolute percentage of farmers marketing maize and red sorghum (-5%) and bulrush millet (-4%). For the other crops, there was little or no change.

How extensive is market participation?
In both survey areas, a relatively small percent of the farmers marketed any crop. In both areas, farming is primarily a subsistence enterprise. Given the poor environment and riskiness of farming, the low level of market participation is not surprising.

Table 4. Percentage of households growing and marketing crops in Mudzi/Mutoko District, Zimbabwe, 1980-81 to 1986-87.

Crop	1980-81	1981-82[a]	1982-83[a]	1983-84[a]	1984-85	1985-86	1986-87[a]
Maize							
Grow[b]	80	81	84	86	92	93	98
Market[c]	8	10	10	15	26	29	26
Bulrush millet							
Grow	80	81	85	82	88	84	88
Market	2	2	4	3	3	7	12
Finger millet							
Grow	37	37	30	41	48	46	44
Market	3	2	3	3	4	5	11
Red sorghum							
Grow	13	10	17	15	18	24	26
Market	0	0	1	2	1	4	3
White sorghum							
Grow	44	46	30	55	56	58	57
Market	1	1	0	1	1	1	4
Sunflower							
Grow	18	20	25	26	32	43	47
Market	7	10	14	18	22	31	41
Groundnuts							
Grow	53	58	65	67	73	74	74
Market	2	3	4	4	7	7	10

[a]Drought years. [b]Grow = percent of farmers growing the crop. [c]Market = percent of farmers marketing the crop. Source: Farmer survey, Food Security Research Project

Table 5. Percentage of households growing and marketing crops in Buhera District, Zimbabwe, 1980-81 to 1986-87.

Crop	1980-81	1981-82[a]	1982-83[a]	1983-84[a]	1984-85	1985-86	1986-87[a]
Maize							
Grow[b]	77	75	74	78	84	90	92
Market[c]	10	6	6	9	10	9	5
Bulrush millet							
Grow	86	86	91	90	91	91	92
Market	39	31	31	43	53	50	35
Finger millet							
Grow	28	27	27	28	32	29	29
Market	2	2	3	4	3	3	5
Red sorghum							
Grow	26	25	28	25	28	27	27
Market	8	6	6	8	6	7	3
White sorghum							
Grow	34	34	37	37	39	36	39
Market	2	2	2	2	2	4	2
Sunflower							
Grow	5	5	5	5	6	10	10
Market	1	1	1	2	2	2	2
Groundnuts							
Grow	64	67	67	67	70	69	74
Market	29	24	23	28	34	34	30

[a]Drought years. [b]Grow = percent of farmers growing the crop. [c]Market = percent of farmers marketing the crop. Source: Farmer survey. Food Security Research Project.

Several additional observations regarding market participation are noted below. First, only one or two crops were marketed to a significant degree (Table 6). Second, of the crops marketed in 1986-87, a very small percentage of the households marketed more than five bags (91 kg/bag). Third, a small proportion of farmers marketed a disproportionate share of the marketed crops. For example, in Mudzi/Mutoko District, 10% of all[5] the households market more than 15 bags of maize and 17% marketed over 15 bags of sunflower. In Buhera District, the distribution was less skewed. For example, only 13% of the households marketing more than five bags of bulrush millet. Other studies that have reported similar results (*i.e.,* a small proportion of farmers doing most of the marketing) include Stanning (1987) and Rohrbach (1987).

When and why do farmers market their crops?
To better understand farmers' marketing behaviour, several questions were directed at identifying factors farmers considered in deciding when to market, where to market, and why they marketed at that facility?

Timing of crop sales
Most farmers sell immediately after harvest, depending on the availability of transport--although a few farmers reported sales in the following rainy season. Since GMB prices are pan-seasonal, there is little incentive to store and sell later. Even if the farmer stores with an intent to sell in the local market later in the season, local prices may not compensate for storage losses (Stanning, 1987).

Reasons for marketing
A need for cash to pay school fees was the most frequently cited reasons for marketing crops soon after harvest. The second most important reason was to purchase consumer goods. Finally, some farmers sold grain to purchase agricultural inputs.

Where do farmers sell their crop and why?
The various channels through which a farmer can sell his produce are shown in Table 7.

Maize
The most important buyers for maize in Mudzi/Mutoko are the GMB (44% of the transactions) and neighbour (37%). In Buhera, farmers reported only six maize sales, 50% to neighbours. For Mudzi/Mutoko, the relative importance of the GMB can be explained by the fact that farmers there produce more maize than in Buhera, roads are good, and the GMB depot is relatively accessible, with average distance

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[5]The group with no marketings includes households who did not grow the crop or grew it and didn't market any.

Table 6.   Percentage distribution of sales by household in the survey areas, Mudzi/Mutoko and Buhera Districts, Zimbabwe, 1986-87.

Bags	Mudzi/Mutoko (N = 122)						Buhera (N = 133)					
	MZ	BM	FM	RS	WS	SF	MZ	BM	FM	RS	WS	SF
0[a]	71	87	78	91	91	22	95	63	79	92	92	84
0.1 to 5	13	11	13	6	7	48	4	24	18	8	8	8
5.01 to 10	4	1	7	0	0	9	0	10	0	0	0	8
10.01 to 15	2	0	0	0	0	4	0	2	3	0	·0	0
15.01 to 20	1	0	0	0	1	5	1	0	0	0	0	0
20.01 to 25	3	1	0	0	0	3	0	0	0	0	0	0
25.01 to 30	2	0	2	0	0	7	0	0	0	0	0	0
over 30	4	0	0	3	0	2	0	1	0	0	0	0
Grows the crop[b]	120	107	54	32	69	58	123	123	39	36	52	13

[a]0 = did not grow, or grew but did not sell; [b]Growers = number growing the crop; N = sample size; MZ = maize; BM = bulrush millet; FM = finger millet; RS = red sorghum; WS = white sorghum; SF = sunflower;
Source: Farmer Survey, Food Security Project, 1988

Table 7. Percentage of sales by type of buyer in the survey areas, Mudzi/Mutoko and Buhera Districts, Zimbabwe, 1986-87

Crop	Mudzi/Mutoko (N = 122)[a]						Buhera (N = 133)[a]					
	GMB	APB	NAPB	REL	NEI	No.	GMB	PB	NAPB	REL	NEI	No.
Maize	44	5	10	5	37	33	17	17	17	0	50	6
Bulrush .millet	29	0	14	0	57	14	17	15	45	0	19	45
Finger millet	43	0	7	0	50	12	0	50	25	13	13	8
Red sorghum	67	33	0	0	0	3	0	33	33	0	33	3
White sorghum	50	0	0	0	50	6	0	0	50	0	50	4
Sunflower	51	20	4	18	0	46	50	50	0	0	0	2

[a]Number of households who marketed; GMB = Grain Marketing Board; APB = Approved buyer; NAPB = Non-approved buyer; REL = By relative; NEI = Neighbour.
Source: Farmer survey, Food Security Project.

around 60 km to the nearest GMB. In contrast, maize production in Buhera is very low. Therefore, given the small quantities involved, it makes sense to market locally.

Bulrush and finger millet
In Mudzi/Mutoko, bulrush millet and finger millet are disposed of locally, with neighbours (direct sales to consumer) accounting for 57% and 50%, of the transaction. This can be explained by the fact that farmers reported getting higher prices on the local market than at the GMB. For Buhera, approved and non-approved buyers are the most important marketing channels. Approved buyers were involved in 50% of the finger millet sales while the non-approved accounted for 45% of the bulrush millet transactions. Together, these two buyers accounted for 60% of total bulrush millet transactions and 75% of the total finger millet sales. Farmers sell to these two buyers because they offer higher prices than in the local market. Also, since they are the major crop in the are, the local market could not absorb all desired sales. Farmers do not sell to the GMB because access tot he GMB depot is poor, due to poor roads and a sever shortage of transport. Furthermore, approved and non-approved buyers move around the villages buying crops.

Sorghum
In Mudzi and Mutoko, both white and red sorghums are primarily grown for home consumption. Sales are insiginficant.

Sunflower
In both districts, almost all sunflower sales were to the GMB or approved buyers.

Additional considerations
The most frequently cited reasons for selling to the GMB was that the net price is higher than what farmers could obtain from other buyers (Tables 8, 9, and 10). However, farmers still sell to other buyers who pay cash immediately, despite their feeling that their crop was downgraded and underweighed.

It is a generally held view that when farmers are hard pressed for money, they sell most of their crops to the approved and non-approved buyers who provide cash immediately, rather than selling to the GMB. Thus, although farmers can get a better net price by selling to the GMB, they are compelled to sell to the other buyers--even though they may discount their crop on grade and weight. If a farmer sells to the GMB it takes about a month before the cheque arrives and another two weeks for the cheque to be ready at the bank--that is, if the farmer has a bank account at all. If the farmer has to cash the cheque at a local store, he may be asked to buy goods worth anything upwards of 25% of the value of the cheque. Consequently, farmers often sell to buyers who will immediately give badly needed cash. Other reason farmers sell to the other buyers are because many sell only small quantities, or because when they sell to non-GMB channels they are not required to use regulation grain bags, which are usually in short supply or which farmers do not have the money to buy.

Table 8. Reasons for selling maize to different buyers, Mudzi/Mutoko District (% transactions), Zimbabwe, 1986-87[a].

Buyer	Price	Pay cash	No card	AFC loan repayment	No transport	Other
GMB	16	0	0	18	0	8
Approved buyer	0	3	0	0	0	0
Non-approved buyer	0	5	3	0	0	0
Relative	0	0	5	0	0	0
Neighbour	18	13	0	0	6	5

[a]Number of transactions = 37, number of farmers who sold maize = 33.
Source: Farm survey, Food Security Project.

Table 9. Reasons for selling bulrush millet to different buyers, Mudzi/Mutoko District (% transactions), Zimbabwe, 1986-87[a].

Buyer	Price	Pay cash	No card	Buyer collects	No transport	Other
GMB	22	0	0	0	0	7
Approved buyer	0	10	0	0	0	0
Non-approved buyer	0	14	0	0	0	0
Neighbour	14	29	0	14	0	0

[a]Number of transactions = 14, number of farmers who sold = 14.
Source: Farm survey, Food Security Project.

Table 10. Reasons given by farmers for selling bulrush millet to each buyer, Buhera District (% transactions), Zimbabwe, 1986-87[a].

[a]Buyer	Price	Pay cash	No card	Buyer collects	No transport	Other
GMB	12	0	0	0	0	0
Approved buyer	2	10	2	0	0	0
Non-approved buyer	4	18	6	16	4	2
Neighbour	2	14	0	6	2	2

[a]Number of transactions = 52, number of farmers who sold bulrush millet = 52. Source: Farm survey, Food Security Project.

MARKETING PROBLEMS OF FARMERS

This section deals with farmers' perception of the grain marketing system in an effort to identify problems that need solutions.

The GMB
Table 11 shows the most important problems farmers face in dealing with the GMB. For each of these problems, farmers proposed solutions which are discussed below.

Late payment
First, in both Mudzi/Mutoko and Buhera, farmers reported the problem of late payment (45% and 55% of farmers, respectively). The GMB's target is to pay farmers within three weeks. However, due to centralised cheque processing in Harare, cheques often reach the farmer after one or two months. The delay is increased by the fact that the GMB also recovers loans on behalf of the AFC. Therefore, cheques are disbursed only after being checked against AFC loans.

Proposed solution. Most farmers in Mudzi/Mutoko and in Buhera said they want cash on delivery or cheques should be delivered within a short period. This is the most desirable solution, but the GMB also faces numerous constraints. First, the GMB deals with numerous small cheques and does not have the requisite manpower to process them quickly. Second, paying cash on delivery or allowing local depots to handle cheques is constrained by the ability of the GMB to devise a strict accountability system.

Unreliable supply of grain bags
The next most frequently reported problem was an unreliable supply of grain bags. Approximately 9% of Mudzi/Mutoko and 30% of Buhera farmers cited this as a problem. This problem is two-pronged. First, some farmers do not have the money to purchase the bags. Second, bags are often not available on time and in adequate quantities. The first issue is ironical in that farmers want to sell to get money, yet they are first required to have money to purchase the bags. The GMB is reluctant to give farmers grain bags on credit, because farmers owe the Board about Z$2 million in grain bag debts from last year.

Proposed solution. One solution is to allow local businessmen to trade in grain bags. Thirty-nine percent and 7% of farmers in Buhera and Mudzi/Mutoko Districts, respectively, thought the above system could solve their problems.

Unfair grading
Farmers thought that the GMB grading/weighing system was unfair. Fifteen percent of the Mudzi/Mutoko farmers and 10% of the Buhera farmers thought that GMB graded their crops unfairly. Farmers send their crops in one truckload with other farmers. The GMB takes a sample from the truckload and awards the same grade to the whole consignment. This system penalises those farmers with a good grade

crop. This problem is compounded by the fact that some farmers do not understand the grading system.

Proposed solution. The grading problem could be solved by assigning AGRITEX the responsibility of teaching farmers grading procedures during slack periods.

Weight requirement

Farmers identified the problem of variation in the weight of a bag of grain. The GMB accepts anything within the 89-93 kg range. If a grain bag's weight falls outside the above range, the farmer is penalised. For example, if the weight is below the range, the farmer is asked to refill the bag, which takes time. On the other hand, if the weight is above the range, the farmer loses because the GMB does not pay for the extra kilograms. Approximately 11% of farmers in Mudzi/Mutoko do not have access to a scale when packing their grain for the market.

Proposed solution. Farmers proposed that the GMB should pay on a per kilogram basis, as does the Cotton Marketing Board.

Approved and non-approved buyers

The approved and non-approved buyers are a link between the farmer and the GMB. The approved buyer is a legal agent for the GMB, while the non-approved buyer operates informally. Table 12 shows the problems farmers face when dealing with these two types of buyers.

Low prices

The most frequently reported problem with these buyers was that they offer low prices, compared to the GMB. Yet, in both Mudzi/Mutoko and Buhera, many farmers sold crops to approved and non-approved buyers. GMB allows the approved buyer a fixed margin. For a given grade, the buyer cannot directly cheat on prices because the prices given by the GMB are displayed on boards on his buying premises. However, the non-approved buyer is not bound by any law. In Mudzi/Mutoko, 18% and 61% of the farmers were discontented about the prices they received from approved and non-approved buyers, respectively. In Buhera, 31% and 34% of the farmers felt that the approved and non-approved buyers, respectively, gave them low prices.

Proposed solution. Twenty-two percent of the farmers in Mutoko said that non-approved buyers should be prosecuted., In Buhera an equal percentage felt the same action should be taken, for both the approved and non-approved buyers who do not follow the regulations.

Waiting time

Fifty-five percent of the Mutoko farmers reported having to wait in the queue before being served by the approved buyer. For the non-approved buyer, only 11% reported this problem. In Mutoko, there is only one approved buyer at Mutoko Growth Point, who is flooded by farmers who need cash. Some farmers reported waiting up to three days before being served. In Buhera, no one reported this problem.

Proposed solution. Farmers proposed that the government should encourage approved buyers to build more buying stations so that they do not have to waste so much time waiting to be served.

Extra large buckets
Farmers reported that the buyers sometimes use extra large buckets or weights which are intended to underweight their crops. In Buhera, 31% of farmers felt this was a problem with both types of buyers, while in Mudzi/Mutoko, 3% said this was a problem with approved buyer and 11% for the non-approved buyer. Low prices and underweighing are self-reinforcing practices which effectively work against the farmer.
Proposed solution. The farmers recommended that buyers who follow these practices should be prosecuted. Alternatively, the GMB should construct a depot nearby.

Payment in kind and installments
The last important problem is the practice of payment in-kind and/or by installments. In Buhera, about one-quarter of the farmers cited this problem for both types of buyers, while in Mudzi/Mutoko only a few farmers raised this issue. This problem is more prevalent in Buhera because the buyers are mostly small shop owners who are faced with a liquidity problem. As a result, they ask the farmer to take part of their payment in the form of goods and give him only the balance after deducting the value of the goods. Alternatively, some buyers would offer to pay the farmer in two or three installments depending on the number of bags sold.
Proposed solution. Farmers felt buyers who followed this practice should be prosecuted. In addition, farmers felt that the GMB should construct a depot nearby.

Unreliable and inadequate transport
In Mudzi/Mutoko, 50% of the respondents complained about unreliable and inadequate trucks, while in Buhera, 36% reported this problem (Table 13). The problem has two impacts on farmers.

First, farmers are penalised for late delivery of grain to the Boards because this delays payment for their crop. Also, while waiting for transport, the grain deteriorates and is downgraded. The most frequently reported problem was high transport cost. Feeder roads are poor and transport availability is very low. Therefore, costs tend to be high to compensate the transporter for the risk he is taking on his vehicle. Axles can break easily and tyres wear out quickly. Thus, the two problems further reduce margins at the farm level.

Proposed solution. This is a national problem resulting from the severe foreign currency shortages for importing new vehicles or spare parts. Most farmers (72% in Buhera and 32% in Mutoko) felt that the government should provide affordable transport in time. This year, supplemental transport services were provided by government making available District Development Fund and army trucks for hauling communal area crops to the Boards. This assistance should be provided earlier before the crops have lost their grades. The second solution proposed was

Table 11. Percentage of households reporting major problems with the GMB, Mudzi/Mutoko and Buhera Districts, Zimbabwe, 1986-87.

Problem	Mudzi/Mutoko	Buhera
Late payment	46	55
Unreliable grain bag supply	9	30
Unfair grading	15	10
Strict 91 kg weight requirement	11	0

Source: Farmer survey, Food Security Project.

Table 12. Percentage of households reporting problems with the approved and non-approved buyers in Mudzi/Mutoko and Buhera, Zimbabwe, 1986-87.

Problem	Mudzi/Mutoko		Buhera	
	APB	NAPB	APB	NAPB
Low prices/unit	18	61	31	34
Queue too long	55	11	0	0
Extra large buckets	3	11	31	31
Payment in kind/installments	3	6	26	27

Source: Farmer survey, Food Security Project.

Table 13. Major transport problems reported by survey households, Mudzi/Mutoko and Buhera Districts, Zimbabwe, 1986-87.

Problem[a]	Mudzi/Mutoko	Buhera
Inadequate/unreliable transport	56	36
High cost	40	38

Source: Farmer survey, Food Security Project.

group hiring (7% in Buhera and only 3% in Mutoko). The farmers argued that, given the restricted supply of transport, farmers should form groups and negotiate with a transporter, thus utilizing available transport more efficiently.

CONCLUSION AND ISSUES FOR FURTHER RESEARCH

Only a small percentage of the farmers interviewed in the Natural Region IV (Mudzi/Mutoko) and V (Buhera) market crops. Of those who marketed, only a small percentage marketed more than five bags of any crop. These results raise several important questions. First, is price support for small grains an effective way to transfer income to poor households in the communal areas and improve their food security? Second, GMB delays in paying farmers forces them to sell to other buyers, who pay in cash but at a discount. Can changes be introduced that would speed up payments, and/or provide for cash payments? Third, most farmers seem to sell through non-GMB channels which are suited for small throughput, which are characteristic of most communal areas in marginal farming locations. Can the GMB introduce procedures to better serve farmers with small quantities to sell? Fourth, what procedures could be introduced to ensure that farmers' crops are properly graded and paid accordingly? Should traders be prosecuted as proposed by farmers or are there other ways to solve this problem? Finally, is it possible to improve transport services through group marketing and similar mechanisms? These issues will be evaluated in greater detail in the next stage of the study.

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