

## II. BEAN PRODUCTION PRACTICES AND BOTTLENECKS AMONG SMALLHOLDER FARMERS IN MALAWI

### INTRODUCTION

Malawi's agricultural performance since independence has been commended by donor agencies such as the The World Bank as one of the most successful in sub-Saharan Africa. Indeed, in the 1970's Malawi was a front-runner in integrated rural development projects in the region. The agricultural sector in Malawi is bimodal in that it involves the estate sector and the smallholder sector. The estate sector has been the main basis for the country's expansion of export production. Main crops grown by the estate sector are: flue-cured and burley tobaccos, tea, sugar, and coffee. The small-holder sector is composed of largely small farmers who constitute about 88% of the population. These supply the bulk of the country's food requirements as well as providing some surplus for export. Apart from growing maize, the smallholder farmers also grow cash crops such as dark-veined tobacco, cotton, tea, sugarcane, and, more recently, burley tobacco.

The government's emphasis on development in general and the smallholder sector in particular has enabled the country to achieve a status of self-sufficiency in food such that in early 1980's Malawi was a net exporter of maize. Although Malawi has achieved self-sufficiency in food at national level, there is growing evidence suggesting that household food insecurity is prevalent in the country. Indeed even in years of good harvest some households are neither able to produce nor purchase enough food to meet their requirements. This is reflected in high levels of malnutrition, high child mortality rate and depletion of food stock before the next season among most households.

Apart from maize, beans are a next important food crop in most areas in Malawi among smallholder farmers. They are also an important

cash crop. The importance of beans as a relatively cheap source of protein is well recognised throughout the country. For instance, in institutions such as boarding primary schools, day and boarding secondary schools, hospitals, prisons and even among refugees, beans are usually a prominent part of the diet. This crop is mainly produced by smallholder farmers who benefit from the crop twofold: as a source of food and as a source of income. Just as is the case with other crops, the growing of beans at smallholder level is not without constraints. This study, therefore, set out to examine bean production practices and bottlenecks among smallholder farmers in Malawi: a case study of smallholder farmers in Blantyre ADD.

So far, the Bean/Cowpea CRSP has carried out surveys in the Central and Northern Regions of Malawi with a view to understanding various cultivation systems and practices and also to understanding their determinants.

### STUDY OBJECTIVES

This study is part of an on-going study of farming systems, bean production and use practices, designed to assist the National Bean Programme in developing improved bean varieties for smallholders. According, the purpose of the study were to gather information on the farming household and its broader social and economic context and information on farming practices especially as they relate to beans and other legumes.

In the survey, special attention was given to the following:

1. Nature of farming systems in the area which includes crops and cropping patterns during different seasons, animals kept on farms, soil types and rainfall patterns.

The study also gathered information on the cropping calendar, and use of hired labour. Attempts were made to identify major

problems and constraints associated with the farming systems of the area. Special attention was also paid to the role of beans in the farming systems with the following:-

- Various bean varieties farmers in the area grow and why they maintain them;
- Major problems faced by farmers in growing beans;
- Farmers' awareness of bean pests and measures taken for intervention;
- Advice the extension staff give to farmers regarding bean production.

## 2. Social and economic structure of the area.

- Inheritance pattern among the people in the area;
- Method of land acquisition;
- Landholding sizes per household;
- Strategies farmers have developed to supplement their farming activities;
- Food security status of the households and strategies employed to achieve food security;
- Relationship between the farmers and the surrounding estates;
- Number of female-headed households among the farming population.

## 3. Farmers' clubs and income generating activities.

- Determine credit groups in the area or other sources of credit to farmers;
- Collect information on the role of farmers' clubs;
- Investigate income generating activities especially among women.

## 4. Extension service.

- Discuss how the block system is working;
- Find out whether farmers find extension advice useful;
- Amount of block meeting attendance.

### METHODOLOGY

The survey was conducted in Blantyre Shire Highlands Rural Development Division of Blantyre Agricultural Development Division. The Project has seven EPAs and it covers the following districts: Blantyre, Thyolo, Chiradzulu, and Mulanje. The survey was conducted in Matapwata Extension Planning Area which is in Thyolo district in March-April, 1990.

Two strategies were employed in this study. A questionnaire to gather quantitative type of socio-economic and agronomic data was administered to three hundred respondents. The respondents were chosen randomly from 42 villages. There was, however, purposive sampling of female-headed households. Farmers' lists that are kept at the EPA were used in our sampling. The 42 villages were chosen from five sections (See Table 50 below).

**Table 50. Sample households by sections**

Section No.	Villages No.	Households No.	Interviewed	% Sampled
Chingazi	9	2824	94	3
Muonekera	9	1028	34	3
Nansadi	9	2400	79	3
Sharpe	8	1006	33	3
Phepheni	7	1800	60	3
Total Mean	42	9058	300	3

The questionnaire was divided into two parts. Part one covered general demographic and agricultural information. Part two covered bean production and use. In most cases, both the household head and spouse were present for the interview. The household head was the main respondent for Part One of the questionnaire. Part Two was only answered by bean-growing households and in such cases the women were main respondents since in this area, as documented for the North and Central Regions, women are the major growers of beans in the household.

Quantitative information was also collected through informal discussions with key informants in the area who included the following:

1. Farmers with a good understanding of bean production;
2. Extension workers;
3. ADMARC (Agricultural Development and Marketing Corporation) staff;
4. Village headmen and other local leaders.

#### BEAN CULTIVATION PRACTICES IN MALAWI

The common bean, *Phaseolus vulgaris* L., is second only to groundnuts in grain legume production in Malawi. It provides a cheap source of protein for the majority of the people in the country. The existence of beans in the farming systems has led to the evolution of various production practices in an attempt by farmers to best use the available resources.

In Matapawata EPA the following are the major crops produced: maize, beans, groundnuts, pigeon peas, cowpeas, garden peas, yams, chillies, sorghum, soybeans, cassava, and sweet potatoes. The most common vegetables produced are cabbage, chinese cabbage, rape, turnips, onions, and tomatoes. The area is also favourable for fruit-growing. The most commonly grown fruits are avocado pears, mangoes, lemons,

oranges, tangerines, guavas, peaches, and pineapples. Most of this produce is sold in Blantyre city.

In this diverse cropping system beans are one of the most important crops as shown in Table 51 and 52 below:

**Table 51. Crops that provide most food for the family.**

Crops	Male				Household head Female				Total			
	Rank 1		Rank 2		Rank 1		Rank 2		Rank 1		Rank 2	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
L. maize	176	93	4	2	90	94	-	-	266	94	4	1
H. maize	13	7	3	2	2	4	4	5	15	5	7	3
Beans	-	-	141	78	-	-	69	79	-	-	210	74
Others	-	-	32	18	-	-	14	16	2	1	62	22
Total	189	100	180	100	92	100	87	100	283	100	283	100

L. maize = local maize

H. maize = hybrid maize

**Table 52. Crops that provide most income for the household**

Crops	Household					
	Rank 1		Rank 2		Rank 3	
	No.	%	No.	%	No.	%
Beans	146	52	49	33	-	-
Local maize	52	18	47	31	5	100
Hybrid maize	23	8	3	2	-	-
Others	27	10	52	34	-	-
Not applicable	35	12	-	-	-	-
Total	283	100	151	100	5	100

Other crops that provide income are groundnuts, chillies, cassava, potatoes, cowpeas, pigeon peas, finger millet, sorghum, sugarcane, chickpeas, bananas, tomatoes, and garden peas. Apart from crop husbandry, farmers in this area also keep animals such as cattle, goats, chickens, doves, guinea pigs, rabbits, ducks, and bees. The area is within the Blantyre milkshed and has about 203 dairy farmers who produce about 13,000 litres of milk per month on average.

#### The land situation among smallholder farmers in Matapwata

Landholdings in the country are generally small. Malawi is one of the most densely populated countries in Africa and this coupled with the fact that the majority of the people are in the rural areas engaged in agriculture puts a lot of pressure on land. The 1986/81 National Sample Survey of Agriculture estimated that at national level, the mean landholding size per household was 1.17ha. This was a drop from the average size of 1.54ha in 1968/69. Amongst all ADDs in the country, Blantyre ADD has the lowest average landholding size of 0.88ha.

Historically, most land in Matapwata area was owned by a European settler who had a tobacco and a tea estate. After attaining independence in 1964 government bought this land and through the District Commissioner distributed it to the people. It is, therefore, not surprising that unlike in other areas, chiefs in this area are not as important or a prominent source of land for households.

#### The number of bean varieties grown

Farmers in this area plant a number of bean varieties (components) on a single farm as shown in Table 53 below.

Table 53. Number of components planted on a single farm

Components	Households		Cumulative
	No.	%	
1	77	27	27
2	124	44	71
3	47	17	88
4	25	9	97
5	6	2	99
6	3	1	100
Total	282	100	100

The average number of components grown per farm is 2.17. Other surveys in Northern and Central Regions have indicated that number of components grown on a single farm range from 5 to 21. Farmers who grew three components or less said they did so due to lack of seed. The farmers who grew more than three components indicated that the intention was to avert failure of the new components and also due to differences in taste. Most farmers will choose components because of their perceived attributes. For instance, one component may be liked because it cooks fast yet it is not high-yielding. Kachitosi (chicken droppings), for instance, may be favoured because it is high-yielding yet it has poor culinary qualities. Table 54 shows reasons for preference for various bean varieties in Matapwata EPA.

Table 54. Reasons for preferring some varieties.

Reason	Household head					
	Male		Female		Total	
	No.	%	No.	%	No.	%
Tastes good	50	27	30	32	80	28
Cooks fast	36	19	20	21	56	20
Highly marketable	34	18	10	10	44	15
High yielding	22	12	11	12	33	12
Early maturity	8	4	8	8	16	6
Others	37	20	16	17	53	19
Total	187	100	95	100	282	100

More male-headed households (18%) favoured highly marketable as compared to female-headed households (10%). This suggests that more male-headed households are involved in selling beans than are female-headed households. Fifty-one percent of the male-headed households indicated that they sell most of their beans as compared to 44% for female-headed households. On the other hand, 43% of the female-headed households indicated that they eat most of their beans as compared to 33% of the male headed households. It seems, therefore, that more female-headed households give the nutritional needs of their household. Sixty-seven percent of the respondents indicated that they sell beans as dry beans. Consumption at household level, however, revealed a different picture. Only 11% of the respondents consumed beans in their dry seed form (Tables 55 and 56 below). Many people ate fresh shelled or snap beans. A small fraction (12%) consumed fresh leaves.

Table 55. Form in which most of the beans are sold

Form	Household head					
	Male		Female		Total	
	No.	%	No.	%	No.	%
Dry beans	124	68	82	65	206	67
Fresh beans	15	8	13	10	28	9
Snap beans	9	5	10	8	19	6
Leaves	5	3	5	4	10	3
Do not know	1	-	2	2	3	1
Not applicable	29	16	14	11	43	14
Total	183	100	126	100	309	100

Table 56. Form in which most beans are consumed

Form	Household head					
	Male		Female		Total	
	No.	%	No.	%	No.	%
Dry beans	252	45	96	33	348	41
Fresh beans	177	31	92	32	269	32
Snap beans	99	18	65	23	164	19
Leaves	33	6	35	12	68	8
Total	561	100	288	100	849	100

The number of households selling bean leaves is less than the number of households consuming the same. People in this area, in contrast to those from other areas in Malawi, do not like to pluck leaves because the practice reduces yields. Households, therefore, just produce enough for their own use. About 78% of the households sold their beans at the local market, Goliati. Some private traders buy directly from the farmers in the surrounding villages. Only 11% of the households indicated that they sell to ADMARC. Although only 4% indicated that they sell at city markets, it is likely that most of the beans sold at the local market, handled by entrepreneurs or ADMARC eventually find their way to towns and cities.

In this study the total number of components that farmers planted in the various farms was 13. Some of these were grown by very few farmers whereas others were grown by most farmers. Table 57 indicates those components that respondents liked the most.

Table 57. Components most liked in Matapwata EPA.

Component	Household					
	Male		Female		Total	
	No.	%	No.	%	No.	%
Chimbamba	89	47	49	52	138	49
Kaulesi	48	26	19	20	67	24
Nanyati	24	13	10	10	34	12
Kayera	9	5	2	2	8	3
Others	4	2	4	4	8	3
No preference	13	7	11	12	24	8
Total	187	100	95	100	282	100

Chimbamba = large red-kidney (determinate)

Kaulesi = medium khakhi with purple sparkles (climber)

Nanyati = large creamish with brown spots (climber)

Kayera = large white-kidney (determinate)