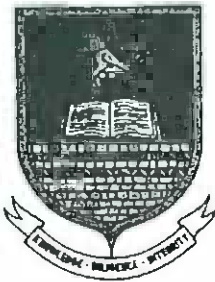
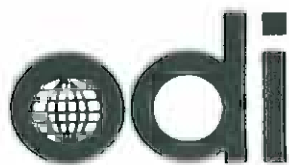




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**INTERMEDIATE
TECHNOLOGY**



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Crop Post-Harvest Research Programme Zimbabwe

*A Report on Baseline
Data available for Mutoko
District, Mashonaland East
Province*

R6674

A Report on Baseline Data available for Mutoko District, Mashonaland East Province

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List of Abbreviations

AEO	Agricultural Extension Officer
AES	Agricultural Extension Supervisor
AEW	Agricultural Extension Worker
AFC	Agricultural Finance Corporation
Agritex	Agricultural and Extension Services
ARDA	Agricultural Rural Development Authority
CCZ	Cotton Company of Zimbabwe
COOPIBO	
CSC	Cold Storage Commission
CSO	Central Statistics Office
DR&SS	Department of Research and Specialist Services
DTC	Development Technology Centre
EEC	European Economic Community
ENDA-Zimbabwe	Environmental Development Agency-Zimbabwe
GMB	Grain Marketing Board
KDCA	Kajiwa Development Co-ordinating Association
NGO	Non-Governmental Organisation
NRs	Natural Regions
SSCF	Small Scale Commercial Farmers
UZ	University of Zimbabwe
VIDCo	Village Development Committee
WADCo	Ward Development Committee
ZFC	Zimbabwe Fertilizer Company
ZFU	Zimbabwe Farmers Union
ZOPP	Zimbabwe Oil-Press Project

BACKGROUND

Location

Mutoko District totals 4,092.50 km². The District is situated at a distance of about 140 km northeast of Harare along the tarred road going to Mozambique and Malawi. The land is categorised into Small Scale Commercial Farms (SSCF) (12.6%), Resettlement Areas (38.7%) and Communal Area (48.7%). The District land is also classified into Natural Regions (NRs) IIb, III & IV in the proportions 15.6%, 40.1% and 44.3% respectively. The major portion of Mutoko Communal Land falls into NR IV and only a small proportion in the south falls into NR III.

Recent developments

COOPIBO (1993) described Mutoko Communal as "overpopulated, over-stocked and suffers from serious degradation of soils and overall deterioration of the ecological system".

Population

The 1992 Census population gave a District total of 124,013 people or 12.0% of the Province's population, of which 47.2% are males while 52.8% are females. Nearly 50% of the population is below 15 years of age and about 4% of the total population reside around Mutoko Growth Point. There is a total of 25,122 households with an average size of 4.9 people per household (compared with a national average of 4.8) and a population density of 30.3 persons per km², which is above a national average of 26.6 persons per km². The literacy levels are 81% for men and 66% for women with a district level of 73% for the population aged 15 + years (second lowest level in the province). Generally there is a high land pressure and the district is experiencing emigration into neighbouring Mudzi District. The dependency ratio is 37%.

Infrastructure

Mutoko is a Growth Point with a Post Office, hospital, banking facilities, Grain Marketing Board (GMB) depot and Cotton Company of Zimbabwe collection points. Although marketing of horticultural crops is open, there are also Agricultural Rural Development Authority (ARDA)-assisted marketing facilities. Electricity is available at Mutoko Centre. There are at least 10 rural service centres in Mutoko Communal Land. Piped water is supplied to Mutoko Centre, Nyamuzuwe (from a dam) and Makosa (from a borehole). At least 100 other boreholes have been constructed in the area.

Climate

Mutoko has a sub-tropical climate with cool dry winter and hot rainy summers. Mean annual rainfall ranges from about 700 mm in the south to about 650 mm in the North and East; while mean annual temperature ranges from 20 °C in the south to over 22.5 °C in the north. Mean monthly temperature is 14.9 °C in July increasing to 22.3 °C in October. Most of the land is frost-free.

Soils

Mutoko soils can be classified into 2 broad categories. In the north and west, upland soils are moderately shallow to deep, brown coarse grained sands and loamy sands overlying strong brown, fersiallitic loamy sands; while in the south and east, the soils are shallow to moderately deep, yellowish red, coarse grained loamy sands overlying red, fersiallitic sandy loams.

INSTITUTIONAL ENVIRONMENT

The District is divided into 29 Wards; each consisting of 6 villages with about 1,000 people per village or 80 to 120 families. Each village has village development committees (ViDCos) which report to the ward development committee (WaDCo). An elected councillor in the Rural District Council represents each ward. The council is headed by a Chief Executive Officer.

Agritex is based at Mutoko Centre and is headed by the District Agricultural Extension Officer (DAEO). He is supported by four Agricultural Extension Officers (AEOs), agricultural extension supervisors (AES) and extension workers in each ward. The approach followed is to work with farmer groups which are generally formed by the Zimbabwe Farmers Union (ZFU).

There is a GMB depot and a few approved buyers in the district. There are four Cold Storage Commission (CSC) sales pens in Mutoko. Agrochemical companies such as Zimbabwe Fertilizer Company (ZFC) and Agricura have outlets at Mutoko Centre. The Agricultural Finance Corporation (AFC) provides credit facilities to communal farmers and most of the loans are short term; mainly used to acquire inputs for maize, groundnuts, sunflower and sorghum production. Most households in NR III have easy access to agricultural inputs and institutional support services because of their proximity to Mutoko Centre.

There are both informal and formal farmer co-operatives. Farmers co-operate informally to provide mutual aid in the form of exchanging and sharing of labour, animal draught power, and equipment. This type of co-operation is task-specific and is mainly for weeding, planting, harvesting and threshing. It usually involves more than 10 people, mostly relatives, friends and/or neighbours.

Neighbours also co-operate formally through organised farmer groups co-ordinated by a committee. Such groups have better access to technical, extension and market services.

Surveys conducted by Coopibo (1985) identified 3 categories of farmer groups, namely: marketing and supply co-operatives, agricultural producer groups and agricultural projects.

Relevant Programmes, projects and their implementers

The District has been involved in the ARDA project with European Economic Community (EEC) funding. This project aimed to assist small-scale producers of horticultural produce through the provision of transport and collection points. The

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project covers most of the districts but EEC funding was scheduled to be terminated end of 1996. It is planned that the farmers involved will take over management of the project activities through formation of horticultural marketing associations.

Environmental Development Agency-Zimbabwe (ENDA-Zimbabwe) has been working in some wards in the district since 1985 under the ENDA Seed Action Programme. Within this programme, the Indigenous Seeds Project was initiated during the 1987/88 season (covering nine districts including Mutoko) and was extended until 1997. The project is concerned with the development and extension of small grain cultivation in the semi-arid areas. The project has three components: research to evaluate and characterise indigenous varieties; a bulking programme of indigenous varieties; and a commercial seed production programme of improved varieties in collaboration with SEED-CO Pvt. Ltd.

COOPIBO has been working in the district since 1988 and currently operates in eleven wards. Activities include assisting farmers in establishing small infrastructures which they need to facilitate their agricultural improvement efforts, such as constructing farmers' halls, dip tanks, wells and dams. COOPIBO is also assisting with establishing:

- (i) revolving loan schemes
- (ii) tree nurseries
- (iii) savings clubs.

Through a mechanisation project which aims to reduce the burden of manual work experienced by farmers, training has been provided in blacksmithing, appropriate harnessing of draught animals, efficient use of firewood (using the tsotso stove) and use of oil presses. Other activities include supporting and strengthening farmers' organisations and improving their interaction with service institutions; and supporting training in areas such as: rural technology, management, training for transformation, gender sensitisation, leadership and look and learn. After the 1991/92 drought, farmer representatives and savings club representatives were assisted to conduct a problem tree analysis during a training for transformation workshop so that they could understand the causes of hunger at household level. PRA techniques have been applied in some instances e.g. in establishment of a tree nursery, to enable farmers to decide which tree species to be grown based on their knowledge and preferences.

Kajiwa Development Co-ordinating Association (KDCA) operates in four wards and work with a total of 79 small groups, formed by villagers to participate in projects. They are involved in a wide range of income generating activities and focus on women. The Department of Research and Specialist Services (DR & SS) are involved in the implementation of a sorghum land race study project to establish community-based seed banks of traditional crops in an effort to maintain high on-farm crop bio-diversity and thereby contribute towards household food security.

A study conducted by Institute of Environmental Studies (IES) and the University of Zimbabwe (UZ) established that the mean annual increments of *Eucalyptus* woodlots in Mutoko is similar to those of local indigenous woodlots. Hence the performance level does not justify the clearing of natural woodlots for establishment of *Eucalyptus*. Individuals own most of the woodlots. School-ownership ranks second while co-

operatively-owned woodlots are the least frequent. The *Eucalyptus* tree is mainly used for poles rather than fuelwood.

FARMING SYSTEMS

Crops

Land use according to crop is ranked in descending order of importance as follows:

- Maize,
- Groundnuts,
- Vegetables and sunflower,
- Sorghum,
- Cotton,
- Pearl millet and
- Finger millet.

However, maize and pearl millet are the most important cereals in terms of the number of cultivators and hectareage per crop. All the crops are primarily produced for household consumption but surplus is sold. Cotton, sunflower, tobacco, and improved sorghum varieties are primarily cultivated for cash. In an evaluation of small grain agronomic farmer demonstrations, organised by COOIBO, farmers scored SV2 and PMV2 (improved sorghum and pearl millet varieties respectively) highly in most aspects except on susceptibility to insect and bird pests; of which they were inferior compared to local varieties.

Almost 80% of the cultivators have vegetable gardens with an average size of 0.3 ha or 12% of total hectareage. Vegetables are an important component in the farming system of Mutoko. They are cultivated in vleis or irrigated portions of the dryland areas. The most commonly grown vegetables include: tomatoes, onions, green leafy vegetables, cabbage beans, peas and cucumber. During summer, the major focus is production of food and cash crops but about 66% of the farmers still cultivate vegetables whereas in winter the focus shifts to vegetables (79% of the farmers). Up to 18% of the gross yield of tomatoes is lost in the field at harvesting mainly because they are harvested when already red-ripe.

Fruit is grown and sold by about 55% of the households and these include mangoes, bananas, guavas and citrus.

In horticultural production and marketing, the biggest challenge is in organising the smallholder farmers into self-sustaining and viable groups.

Livestock

Mutoko communal land is overstocked, causing grazing pressure and subsequent poor animal health.

Seasonality (including crop and labour calendars)

There is a general labour shortage since more than 50% of the households have absent adult members. A significant proportion (43%) of households provide casual labour to other farmers in the communal area. The most labour demanding activities are weeding, harvesting, planting and ploughing in decreasing order of importance. Apart from hiring, labour shortage is also alleviated through mutual aid.

In horticulture, an average of one labour-day is required to harvest, grade, pack and transport 20 - 30 crates of tomatoes to the roadside. Horticultural production is carried out all year round. However, summer production tends to be less than winter production, as farmers will also be concentrating on field crops.

Source of income

Most of the households depend on marketed cash- and food-crop surpluses to generate most of their income. GMB crop intake data indicates that maize, sorghum, pearl millet and oilseeds (sunflower and groundnuts) generate most of the income.

A significant proportion of household income comes from sale of horticultural crops (fruits and vegetables). Vegetables are produced intensively in the vleis and marketed in Harare.

Remittances also constitute an important source of household income. Up to 60% of male household heads are employed in surrounding commercial farms and in distant urban areas, particularly Harare. A substantial amount of the remittances are in kind such as agricultural inputs.

During the 1991/92 severe drought, vegetable selling was the major source of off-farm income supplemented by beer brewing.

Gender roles

There is generally more female labour available than male labour with 1.69 females per household versus 1.01 males. In addition, 34% of the households are female headed and therefore women contribute most of the labour in crop production.

Land availability and access

Nearly 98% of arable land is cultivated with an average holding of 2.6 ha per household. 15 to 20% of the households have no access to land.

Risk Aversion Strategies

Short season and drought tolerant crop cultivators such as R201 and R215 in maize, are grown.

On-farm post harvest (storage and processing)

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Durables are harvested between April and July. Maize is the staple coarse grain consumed after harvest. Small grains are stored in reserve and consumed when maize is in short supply. They are generally less susceptible to stored product insect pests (compared to maize) and can store for more than 3 yrs without serious deterioration in quality. In years of food deficiency, households prefer maize to small grains as food. There seems to be inadequate small grains processing hardware which might be contributing to reduced production and utilisation of these grains as traditional processing tend to be tedious and arduous. In Mutoko West, i.e. Chindenga, Charewa and Nyamuganhu wards, pounding and stone grinding are a heavy burden for women. The Zimbabwe Oil Press Project (ZOPP) collaborated with the revolving loan fund committee (set up with assistance from COOPIBO) in promoting the oil press. During 1995, eight Ram presses were sold in Mutoko and more farmers are still interested. Several farmer groups have attended demonstrations on the use of the presses and filtration of the crude oil.

Enough grain to last at least eight months is produced in most areas. The granaries are of the woven basket type; raised on stones and a timber base with the roof being independent of the structure or detachable, for loading or withdrawing grain. Multiple compartment structures (hozi) with no ceilings but open access holes are also common. A problem tree analysis during a 'training for transformation' workshop revealed that farmers have abandoned the practice of storing large quantities of grain for drought security. Some of the reasons given include lack of technical know-how for construction of granaries, susceptibility of modern maize varieties to pests, selling too much of their grain to satisfy household needs and at the same time anticipating the next season will be good.

Sweet potatoes and onions are stored. Sweet potatoes are stored *in situ* or in specially prepared underground pits. Vegetables (tomatoes and leafy vegetables) are dehydrated and then stored mainly for home consumption but fresh produce is preferred in areas where production is not seasonal. Consumer demands for sun-dehydrated horticultural produce is still limited. There are no reports of fruit processing although large quantities of fruits, especially mangoes, are produced

Marketing systems

The major crops marketed are: maize, pearl millet, sorghum, sunflower and ground nuts. In addition to the GMB depot located at Mutoko Centre there are several approved buyers who operate at the centre. Up to 40% of the Mutoko GMB's intake comes through approved buyers. Farmers prefer to market through approved buyers, partly because they are paid upon delivery of their produce whereas GMB pays farmers 2-3 months later. GMB may prefer farmers to deliver their grain through approved buyers so as to reduce the number of transactions that it must conduct. There are 2 additional collection points in Mutoko located 20 - 30 km from Mutoko Centre.

Mutoko is well serviced by input dealers who have established market outlets at the Centre. The most frequently sold durable crops are sunflower, maize, millets and groundnuts. Sunflower has shown the greatest increase in the absolute percentage of farmers marketing the crop, followed by maize and pearl millet.

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According to Jaure (1989), the marketing characteristics of smallholder horticulture are:

- poor post-harvest handling
- poor packaging
- transport constraints
- exploitation by middlemen
- poor market information
- high market losses
- poor farmer co-ordination and information exchange
- reduced farmer benefits

Peak vegetable marketing is in August and September when there is no labour competition from field crops. Only 23% of the farmers in Mutoko use local district outlets as main markets otherwise the rest rely on the Harare markets. Transport of produce to Harare is lorries (61%), buses (33%) and small trucks (6%). The farmers have to pay transport fees for their produce, sometimes an unloading fee (onto buses) and bus fare to and from the market. There are difficulties in synchronising time-tables for the buses with trucks collecting produce so that the farmers catch a bus to the market after loading their produce into the truck. The gravel roads are often in poor condition during the wet season, causing transport unreliability and physical damage of produce, especially over-ripe tomatoes.

Off farm income

There are limited opportunities for off-farm employment within the district.

SELECTED WARDS

Kawere ward was selected following a visit and discussion with Agritex, COOPIBO, KDCA and ENDA. The ward has a suitable range of crops, KDCA are keen to collaborate and the AEW knows the area well. Final selection of the second ward was not completed, but Chindenga was provisionally chosen.

Kawere Ward

Key characteristics

Population (1992 Census)

Ward	Population			Households	
	Males	Females	Total	Total No.	Average
Kawere	1329	1465	2794	611	4.6

In Kawere ward, ENDA is active in the promotion of small grains under the Indigenous Seeds Project. In an evaluation of the project, priority rating of identified problems faced by farmers from 4 selected villages showed that food shortage and road repairing were their first priority. Grain processing was also identified as a problem in 3 of the 4 villages covered in the

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evaluation. The major benefits derived by farmers from participating in the project included:

- exposure to early maturing crop cultivators with high yielding potential, and
- learning new agronomic practices such as planting methods, thinning and timing operations.

Some reasons advanced for preferring small grains to other crops were (in order of decreasing importance):

- (i) they ensure food security
- (ii) they are used for cultural purposes
- (iii) they are more drought tolerant
- (iv) they are used for beer brewing
- (v) they are used as poultry feed
- (vi) they have good storage quality

ENDA-Zimbabwe identified problem-areas associated with small grains as:

- (i) primary processing (threshing and secondary processing (dehulling and milling) with secondary processing being more serious than the former.
- (ii) bird damage
- (iii) low yield potential of the local cultivators
- (iv) low drought tolerance

KDCA are encouraging women groups to produce sunflowers and have bought a ram press for oilseed expression. The AEW is fully involved in these activities and the programme should collaborate as fully as possible with these groups.

Kawere ward is mostly NR IV.

Chindenga Ward

Key characteristics

Population (1992 Census)

Ward	Population			Households	
	Males	Females	Total	Total No.	Average
Chindenga	2324	2673	4997	1024	4.9

In Chindenga Ward there is significant horticultural activity mainly with ARDA being the key player in marketing of the produce. COOPIBO & KDCA are also operational in this ward.

Contacts

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Mr. Chikove, Councillors' Chairman, Mutoko Rural District Council

Mr. Hungwe Charles, COOPIBO, Mutoko ADP, Box 110, Mutoko, Tel: (172) 445

Mr. Matambo, ARDA Co-op. Association Chairman, Makosa

Ms Katsande Mary, KDCA Chairperson of Executive Board and some committee members, Box 505, Mutoko, Tel: (172) 294/3

Ms Kamusikiri Christine, ENDA-Zimbabwe agent, Kawere Ward.

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