

- The future of the sorghum and pearl millet sector should be guided by constraints in the complete food cycle.

Participants also agreed that issues raised and ideas generated at the workshop should be put together into a concept note for presentation to the SACCAR Technical Committee for Agricultural Research. The paper would be used for sourcing funds from donors and seeking commitment and support from directors of research in SADC national programs.

## **Linking Promotion of Improved Sorghum and Pearl Millet Varieties with Community Based Seed Multiplication: the Rural Livelihoods Programme**

**J Mackinon<sup>1</sup>, E S Monyo<sup>2</sup>, and N Dube<sup>3</sup>**

(1. Zimbabwe Programme Officer, Oxfam Canada, PO Box 1280, Bulawayo, Zimbabwe; 2. Senior Scientist (Breeding), ICRISAT-Bulawayo, PO Box 776, Bulawayo, Zimbabwe; 3. Programme Officer, ORAP, PO Box 877. Bulawayo, Zimbabwe)

### **Abstract**

Five NGOs (Oxfam Canada, Management Outreach Training Services for Rural and Urban Development [MOTSRUD], Dabane Trust, Zimbabwe Project Trust [ZPT], and Organization of Rural Associations for Progress [ORAP]) are collaborating on a pilot program on rural livelihoods in Zimbabwe. The program aims to improve nutrition levels and reduce vulnerability to drought in 15 target rural communities in drought-prone regions. SMIP was requested to participate because of its expertise on sorghum and pearl millet — crops that have a comparative advantage in drought-prone areas. SMIP's role is to provide improved varieties and training on small-scale seed production techniques to farmers, project managers, and extension workers involved in the program.

To date, the program has disseminated information to about 30 000 farmers (including 600 women) on the benefits of using improved varieties and sustainable farming practices. A central seed bank and 15 community seed banks (in each target community) have been established. The focus of the program is therefore changing. More emphasis should be directed towards ensuring that planting at community level is done in a

timely manner, improving methods of grain processing and storage, and on developing markets for the anticipated excess grain.

### **Introduction**

The program on rural livelihoods was initiated in five drought-prone areas in Zimbabwe — Mudzi, Chiredzi (Save valley), Matobo, Insiza, and Binga districts. In these areas, sorghum and pearl millet have a comparative advantage over maize because they require much less water. In the past 19 years, rainfall patterns in these areas were: four major droughts, when little or no grain was harvested; 4 years of good rains and good harvests of sorghum, pearl millet, and maize; and 11 years of mediocre rains in which maize yields were minimal or non-existent, but sorghum and pearl millet yields were adequate to meet household food security needs as well as provide surplus grain for storage or sale. In such an environment, farmers who plant maize only will go hungry. Those who plant enough sorghum and pearl millet will be food secure at minimum, and in many cases can produce surpluses for sale.

One of the major constraints to increased sorghum and pearl millet production in these areas, as well as throughout the country, is unavailability of seed. In contrast, maize seed is readily available in unlimited quantities. To improve food security in the target communities, the livelihoods program's major strategy is therefore to make sorghum and pearl millet seed available at the local level. ICRISAT was asked to train 'master' farmers to multiply seed and provide them with good quality seed to multiply.

### **Objectives**

The livelihoods program aims primarily to benefit poor rural women farmers. Its long-term goal is to increase nutrition levels and reduce vulnerability to drought in the target communities. This goal can be achieved by increasing sorghum and pearl millet production, leading to a reduction in the need for food aid. In addition to promoting the production of small grains, the program has other components including health promotion (malaria prevention), fortification of grains, promotion of family gardens, and capacity building projects. This report focuses on the small grains production activities in which SMIP is involved. Impact indicators of this program component include an increase in sorghum and pearl millet area, and in the proportion of sorghum and pearl millet grain in the total harvest, from 10% to 30%.

Three major activities have been conducted under the small grains project. These include education and awareness campaigns, development and promotion of seed banks, and outreach and training programs. Varieties that the project worked on include sorghum varieties Macia and Larsvyt 46-85 and pearl millet varieties PMV 3, Okashana 1, and Okashana 2.

### **Education and awareness campaigns**

Farmers were exposed to and trained on quality control aspects of seed production. SMIP provided seed for multiplication. Farmers paid for the seed either in cash (Z\$10 per kilogram up-front) or in kind, i.e., 20 kg grain per kilogram of seed, payable after harvest. This system of payment was designed to ensure that quality seed is produced and distributed, while ensuring that the project becomes sustainable.

A successful seed fair was held in March 1999 for farmers from ZPT, MOTSRUD, Dabane Trust, and ORAP projects in Siachilaba (Binga) to increase their awareness of available varieties. A sorghum and pearl millet recipe book was compiled to help promote a wide variety of traditional methods of cooking small grains and other nutritious local foods.

The campaigns reached about 30 500 farmers, exposing them to the benefits of growing and producing good quality seed of improved sorghum and pearl millet varieties and use of sustainable farming practices. Thirty 'master' farmers participated in the training courses on seed production.

### **Seed banks**

Fifteen farmer seed collection points/banks with a holding capacity of 15 t each were established in each target community. The seed banks are run by a food security/small grains committee which is also in charge of a loan revolving fund made up of the commitment fees (Z\$10 each) contributed by participating farmers. The money is used to purchase seed and storage chemicals.

Substantial quantities of seed were collected: ORAP collected 800 kg sorghum and pearl millet from Insiza, 1.4 t from Matobo, and 2.4 t from Binga; Dabane Trust collected 12 t sorghum and 800 kg pearl millet from their three areas of operation; and MOTSRUD collected 3 t. Similarly, large quantities of seed were collected as payment for the seed "loan". ZPT collected 1.95 t, Dabane Trust collected 500 kg sorghum and 150 kg millet, MOTSRUD collected 1.075 t, and ORAP 2.4 t.

Of all seed produced, only that from the 286 farmers under the supervision of ZPT was of poor quality. This was a result of excessive rainfall received in the project area.

Five seed bank 'cocoons', each with a storage capacity of 5 t, were purchased for each of the implementing NGOs.

### **Outreach and training**

SMIP trained field officers from participating NGOs on basic agronomic practices in sorghum and pearl millet seed production. Areas covered include isolation, fertilizer application, planting and thinning, weeding, pest and disease management, roguing of off-types, harvesting, and general crop management. A training workshop on sorghum and pearl millet seed production was held at Matopos Research Station for extension personnel, program managers, field coordinators, and 'master' farmers from the 15 target communities.

A 2-day sorghum and pearl millet seed production workshop was conducted at Matopos Research Station, and attended by 34 farmers (18 women, 16 men) from the 15 target communities, extension personnel, and program managers and field coordinators from the participating NGOs. The course included a soyabean production training session facilitated by the University of Zimbabwe.

### **Conclusion and future strategies**

The program's target was to reach about 30 000 farmers in the 1998/99 season — raise their awareness and understanding of the benefits of using early-maturing sorghum and pearl millet varieties. Project participants included 600 women. All the project farmers are now capable of using sustainable farming practices, which include the use of farm manure, appropriate plant spacing and population, and weed control. Fifteen community seed banks were established in target areas with a central bank for seed distribution. Once farmers begin to plant improved varieties, the demand for good quality seed will increase. The 'master' farmers trained under this program are expected to be pivotal in assisting the community to replenish their seed banks with good quality seed.

The availability of good quality seed within the target communities means that farmers will produce more and the need to utilize labor saving devices like village threshing machines will increase. Equally important will be the need to improve the storage and processing of grain and to find markets for the surplus grain.