

POST-HARVEST MANAGEMENT

Zimbabwe's economy is starting to improve after a long period of economic decline from 2000 to 2008. The agriculture sector plays a key role in the country's economic recovery, with about 70 percent of the population depending on agriculture for their livelihood. However, post-grain harvest losses remain a major concern to many of the smallholder farmers in Zimbabwe. Post-harvest losses, estimated at 20 to 30 percent in storage alone, can be as high as 40 percent when including field, transportation, handling and processing losses. In most communal areas of the country, grain production is characterized by one year of good production followed by two or three years of deficit. That is why long-term post-harvest storage is so important.

What FAO Zimbabwe is doing

The Food and Agriculture Organization of the United Nations (FAO) in Zimbabwe, through support from the Office of United States Foreign Disaster Assistance, implemented a pilot project across six wards in the districts of Guruve and Gokwe South from June 2010 to July 2011. The project aimed to contribute to household food security by reducing post-harvest crop losses through improved post-harvest management practices.

What FAO is doing

In close collaboration with local partners, FAO developed a training manual on post-harvest management of maize, small grains, groundnut and legumes, and distributed it to the Government of Zimbabwe's Department of Agriculture Technology and Extension Services officers. The manual explained the step-by-step post-production stages and suggested improvements in post-harvest processes.

A workshop on post-harvest management was organized and attended by 41 agricultural extension workers. Field tours enabled the extension workers to give recommendations on granary types and ways to improve post-production management to smallholder farmers in the six wards. Additional training was provided to 54 local builders and 48 local tinsmiths on the construction of improved brick granary and metallic silos. By the end of the project, three granaries and three metallic silos were built.

Brick granaries and metallic silos are much more effective for preserving the grain at the household level than more traditional storage structures. Constructing the granaries and silos and getting farmers to use them for grain storage was the best way to promote the improved structures, and



served as a way to train local artisans and builders. These trained builders and artisans can now construct storage structures for interested farmers.

Impact on farmers' lives

Through the provision of extension support, 3 000 smallholder farmers obtained technical knowledge and skills on improved post-harvest management. In May 2011, farmers from Guruve and Gokwe districts harvested most of their grain and dried it in cribs for a period of one month before treating the grain and storing it. This prevented the grain from moulding or caking while in storage. By October 2011, the quality of grain was still good, with no signs of pest infestation.

On average, 2 tonnes of grain were loaded into each granary constructed through the project. Farmers expressed satisfaction with the size and quality of the silos. The constructed silos and granaries will be used to test the efficacy of grain storage, providing useful lessons to researchers and designers of such structures. The newly constructed silos have also generated much interest from non-project beneficiaries. Using their own resources, other farmers have constructed silos with the help of the local builders and artisans trained through the project.

Challenges

Local construction materials, especially bricks in Gokwe South district, were scarce. Delays in the disbursement of granary construction materials led to delays in construction activities. Delays were also reported in the finalization of the manual, which resulted in the distribution of the manual after the project was completed. At first, the local

builders and artisans did not see the construction of the demonstration granaries and silos as a way to build their capacity. It took time to convince them otherwise.

Lessons

There is a need to continue post-harvest training in order to increase the knowledge base and number of practitioners. Future programmes should measure the efficiency of the different storage facilities and impact of post-harvest technologies on household food security.

What next?

The project will be scaled up in the districts of Gokwe and Guruve and expanded to two new districts: Kwekwe and Mazowe. To improve the knowledge and skills of extension workers on post-harvest management, more focus will be placed on building the capacity of 250 extension workers through training and the distribution of extension manuals. An additional 2 500 farmers will be trained on post-harvest management and have better access to information. They will construct a total of 12 improved storage structures (granaries and metallic silos).

Achievements to date:

- Organized a workshop on post-harvest management attended by 41 extension workers.
- Trained 54 local builders and 48 local tinsmiths on the construction of improved brick granary and metallic silos.
- Trained 3 000 smallholder farmers on improved post-harvest management.
- Constructed three demonstration metallic silos and three demonstration brick granaries.

Partnerships / stakeholders

Department of Agriculture Technology and Extension Services

Ministry of Agriculture, Mechanization and Irrigation Development

Practical Action