



AGRICULTURAL PRODUCTIVITY PROGRAMME FOR SOUTHERN AFRICA (APPSA)

BEAN PROCESSING ENHANCES FOOD SECURITY AND INCOME IN MOZAMBIQUE

Grain legumes are important components of cropping systems in Mozambique's maize-based farming systems, and are predominantly grown by the resource-constrained smallholder farmers, particularly women. They are a key source of nitrogen-rich edible seeds, providing a wide variety of high-protein products and constituting the major source of dietary protein in the diets for many rural households and for the less privileged urban citizenry. Legumes are the second most important source of protein from that of animals. They are also a good source of income. Among the smallholder farmers in Mozambique, Beans, Cowpeas, Pigeon peas and Bambara groundnuts are the main food legume crops grown. The majority of the smallholder farmers usually sell their legume crops in raw form and always early in the season, thereby foregoing potentially high incomes as a result of value addition. Beans, cowpeas, pigeon peas and Bambara nuts have tremendous potential for agro-processing into flour, canning, snacks, milk and stock feeds, to mention a few.

The Agricultural Productivity Programme for Southern Africa (APPSA) embarked on an effort to promote sustainable value-addition to commonly grown food legumes and increase incomes among smallholder farmers in Zambézia and Niassa Provinces (Guruè, Lichinga, Cuamba, Muembe and Chimbonila Districts). About 913 small-scale farmers (610 females) were trained in legume grain selection, packaging, sealing and labelling. Forty (40) Extension staff were also trained so that they could train other farmers not reached by the project. APPSA introduced new agro-processing technologies of legumes in the same five districts, where the farmers were trained in processing of the legumes into



Farmer training in agro-processing of legumes in Gurue

different legume products. Farmers applied the agro-processing skills they learnt to improve food security and generate income through sales of their products.



Farmers tasting some of the bean products



Farmer explaining how she fed baby orphan with bean porridge



Cowpea processing for fritters



Cowpea fritters



Bean porridge

Farmers showcased flour made from common beans, cowpea, Bambara nuts, and pigeon pea at a provincial fair in Niassa. The products generated a lot of interest among the consumers who bought all the products and also registered their interest to learn about the agro processing technologies. In Nzizi community, farmers organized a food workshop and they made processed products from common beans and shared with some members of the community to test the different products.



Cakes and biscuits made from legume flour



Children enjoying legume porridge made by Salmina

In Chimbonila District the use of legumes flour to prepare porridge improved the health of malnourished children in the district. Weight gain for some of the orphaned children who were fed legume porridge was recorded. Similarly in Guruè a farmer was able to demonstrate the nutritional value of bean enriched porridge as a nutritional supplement for an orphaned child.

Salmina is one of the many farmers in Chimbonila District who took it upon themselves to use their own funds to demonstrate some of the agro-processing technologies to fellow farmers. As a result, farmers in the targeted communities are now very motivated to increase legume production not only for sale as grain but also to process into several products. They are increasingly showing interest in producing and using beans for processing into flour, baking cakes, biscuits, *bagias* and porridge. They are also interested in proper packaging of their grain legumes so that they can attract better markets which pay more for quality produce.



Salmina displaying cakes baked using bean flour

Having seen the benefits of agro-processing of legumes, the participating farmers intend to increase areas under legume production and encourage other farmers in their communities to embark on legume processing as an income generating venture. They have organized themselves in “*legumes groups*” which aim at sensitizing other farmers in legume production and processing. Given the interest generated in this work, upscaling of legume production is expected to lead to an increase in agro-processing and improvement in market access, thereby leading to food and nutrition security, and improvement of smallholder farmers’ income.

For more about the success story please contact Dr Oscar Chichongue, the Principal Investigator for the project at IIAM (ochichongue@gmail.com).