



WISHH
World Initiative for Soy in Human Health
Enhancing human well-being through soy



United States Department of Agriculture



Food for Progress: Soyfoods Direct Feeding Program in the Sofala Province of Mozambique

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Direct food distribution of soyfoods in the Sofala Province of Mozambique has resulted in improvements in both objective and subjective markers of health and well-being. Soyfoods were well accepted and provided support for the gap in quality protein sources in the diet of the beneficiaries.



Background and Description

Mozambique is located in the southeastern region of the African continent with a long shoreline on the Indian Ocean. The population is approximately 19 million people. The life expectancy is currently estimated at 40 years. In 2005 the HIV prevalence was estimated to be over 15% in Mozambique. The Sofala Province, where this program is taking place, has the highest estimated prevalence rate in the country at over 26% in 2004. Around 70% of the population lives below the poverty line.

The Planet Aid program undertook both a direct distribution and their unique Soy Restaurant approach to assisting orphans and people living with chronic illness in this project. Soyfoods distributed included textured soy protein (TSP), defatted soy flour (DSF), and soy protein isolate. The collaboration with the World Initiative for Soy in Human Health (WISHH) included the design and implementation of monitoring and evaluation activities for the program. A baseline survey and measures were conducted on 387 persons in the province prior to the start of food distribution with follow-up after six-months with 138 of the food distribution beneficiaries.

Baseline Survey

At baseline, 83 adults and 303 children were measured. Survey items included a number of issues that can impact on health and food security. Most worked outside the home with the most common income source was agriculture (40.6%) with self employment as the second most common employment. Income of less than 100,000 meticais (MZM) (US\$3.75) per month was reported by 43.4% and 32.5% earned between 100,000-500,000 MZM (US\$3.75-US\$18.75) monthly. Most noted that they purchased food (55.5%) and 41.3% grew their own foods. Very few received food from NGOs or other sources. Of those who grew foods, more than a third sold some for income. Most said that they spent less than or equal to half of their income on food (51.3%) and 27% said that they spend more than three-fourths of their income on food. Food was obtained primarily by the mother in the household (38.6%) or another relative (35.2%). Water was also commonly purchased with most spending between 3,000-5,000 MZM per month.

BASELINE HIGHLIGHTS

- Indicators of malnutrition were common in both adults and children
- 98% of children measured were moderately to severely malnourished
- 61% of children showed multiple forms of malnutrition: a higher risk for mortality

Results suggested that access to high quality protein sources was rare with between 0.5-4.4% having common access to animal flesh foods. Chickens or ducks were raised for eggs by 17%, but no respondents noted access to milk or eggs for their families. Soybeans were the most commonly consumed high-quality protein by 4.4%.

Most recipients were at high risk for poor health based on low body mass index (BMI) (85% below 18.5), low muscle function levels (62.6% of children and



65.8% of adults), stunting in children (35.5%), wasting in children (18.4%), and undernutrition in children (40.1%). Composite Index of Anthropometric Failure (CIAF) showed a 98% prevalence of malnutrition in children. Multiple forms of malnutrition (which are related to highest risk for poor health and mortality) was seen in 61.1% of the children measured. Recent weight changes were reported as weight loss by 42.9% or weight gain by 13.4%. Nearly 81% reported that they routinely did not have enough to eat. Most (55.1%) reported problems that prevented them from eating adequately. Diarrhea was reported by 10.6%, nausea by 3.1%, vomiting by 11.1%, stomach pain by 11.9%, general illness by 8.3%, and taste changes by 10.9%. 14.6% reported getting sick from an unclean water supply.



Reported usual levels of activity included heavy (19.8%), moderate (54.3%), and sedentary (25.9%). At baseline 0.5% were pregnant, 1% were breastfeeding, and 1.3% had recently been pregnant. Medications were being taken by 72.4%, which included anti-malarials (34.9%) and other antibiotics by 21.4%. No one reported access to anti-HIV medications.

Follow-Up Survey

The follow-up survey items on acceptability and program understanding showed that 58.7% knew why they received the rations and 28.3% were able to recall how long they would receive the supplemental supplies. The food rations generally lasted between one to four weeks and were consumed by a mean of six people with a range of 3-10 household members.

The soyfoods were well-liked with special preference for the TSP rations noted by 68%. Specifically, recipients noted that they “liked extremely” the taste (94%), look (95%), mouthfeel (96%), and overall qualities (93%) of the food. Only 2

(1.5%) said that they disliked the food somewhat.



A summary of objective data is shown in the text box here. When asked about their perceptions on the healthiness of the soyfoods, 95% said they thought it was healthy for them, 94% said that they felt they were healthier because of the rations, and 4% said that they didn’t notice any difference after six months of rations. There was no significant difference in reported diarrhea or other illness.

Conclusion: This pilot program showed an important nutritional impact in recipients of soy product rations. Continued monitoring and expansion of the program to targeted beneficiaries will be important to

the improvement of nutritional health, especially in populations with a high prevalence of undernutrition.

Further exploration to describe the specific benefits of fortifying diets with high-quality protein is warranted.

FOLLOW-UP HIGHLIGHTS

- 67% of adults improved BMI
- 81% of all improved muscle function
- 92% of all improved body cell mass
- 94% of all maintained/improved fat
- 94% of children improved CIAF categories
 - 68% improved Height for Age
 - 69% improved Height for Weight
 - 76% improved Weight for Age