

# Towards Sustainable Nutrition Improvement in Rural Mozambique

TSNI Summary Progress Report #2: 26 November 2002 - 1 March 2003

## 1. Project Partners

Department of Agricultural Economics, Michigan State University (MSU)  
Nutrition Division, Ministry of Health, Mozambique (Nutrition/MISAU)  
World Vision, Mozambique (WV)  
National Institute for Agronomic Research, Mozambique (INIA)  
Southern African Root Crops Research Network, Mozambique (SARRNET)  
Provincial Directorate of Agriculture of Zambézia, Mozambique (DPA)  
Helen Keller International, Mozambique (HKI)

## 2. Project Objective

To determine whether a food-based intervention strategy can lead to sustainable, year-round intake of vitamin-A rich foods, reduced fluctuations in seasonal household calorie supply, and an overall improvement of diet diversity, nutritional status and diet quality in a cost-effective manner, particularly among children under five years of age.

## 3. Project Approach and Partner Roles

TSNI is an action research project based in Mopeia and Namacurra districts in Zambézia Province, Mozambique. The project integrates nutritional, agronomic, and socio-economic components to achieve the project objective. Project extension personnel will work with farmer groups and groups of women using a consultative approach to successfully introduce beta-carotene rich sweet potatoes and other sources of vitamin A into the young child and family diet. Diversified use of new foods will be promoted as will the development of markets for those products. MSU leads the socio-economic research activities, while INIA and SARRNET contribute to the agronomic research component and develop training materials related to the introduction of new varieties and improved agronomic practices. World Vision is the lead partner in the agriculture and nutrition extension activities, in collaboration with the MSU project coordinator and the DPA. HKI is developing the social marketing strategy, with WV and MSU assisting in implementation. The DPA will participate

most closely in the collection of monthly prices on sources of vitamin A rich foods and in market and commercialization studies, in collaboration with MSU and WV. Data entry and analysis will be done in-country, emphasizing the training of two nutritionists in data analysis and report preparation.

### 3. Major Accomplishments and Events

The past 3 months have been dominated by three major activities: 1) the finalization of the design, followed by the implementation of Part A of the baseline survey and relative prices survey, 2) the initiation of agricultural extension and research activities in the intervention areas, and 3) the establishment of field offices, continued staff hiring, the procurement of vehicles and other survey equipment, and the finalization of the sub-contract agreement between MSU and World Vision.

In addition, Jan Low (project coordinator), Nadia Osman (project nutritionist), and Armanda Gani (government nutritionist collaborating with the project) attended the International Vitamin A meetings (XXI IVACG conference) in Marrakesh, Morocco from the 3-5 of February 2003.

Finally, the highlight of the end of this initial phase was our first donor visit February 22 through 25<sup>th</sup> by Cheryl Jackson of the Sustainable Development office in USAID.

Each of these accomplishments and events is briefly described below:

- ❑ Part A of the baseline survey began on January 2<sup>nd</sup> 2003, and as of 1 of March was 73% complete. Survey completion is expected on 19<sup>th</sup> of March 2003.
  - Before undertaking the survey, it was necessary to visit and list all households in selected villages, identifying all households with children under 28 months of age. In addition, it was necessary to list all members of farmer's groups which already existed in some sites, again identifying all members with children under 28 months of age. The village level listing was completed on 15<sup>th</sup> of December 2002, while the listing of farmer group members continued throughout the survey as in many cases it was necessary encourage the formation of new farmer's groups in areas where little previous extension work was being done with families having young children.
  - From 15<sup>th</sup> of December through the end of the year, Part A of the survey was pilot tested and enumerators trained in survey implementation.
  - Part A of the baseline survey includes the following components:
    1. Demographic information on all family members, including individual participation in off-farm as well as on-farm activities;
    2. Nutritional knowledge of the principal caregivers (female and male) of the selected child, including specific questions concerning knowledge of foods rich in vitamin A;
    3. Semi-quantitative food frequency method (developed by HKI) concerning consumption of vitamin A rich foods by the focus child during the last 7 days;
    4. Twenty-four hour recall indicator survey on consumption of foods by the household (NUTRIPROX);

5. Listing of all major agricultural crops (staple foods, cash crops, fruits and vegetables), produced and sold by the family in 2002; More detailed production data gathered on the dominant crop produced of each type;
  6. Detailed production and sales data on sweetpotato and manioc, with additional data concerning the various uses of sweetpotato at the present time;
  7. Participation in organized group activities and fishing by household members;
  8. Listing of assets (including livestock), condition of housing and source of drinking water during the rainy and dry seasons;
  9. Indicators of purchases made during prior month, and the reception or sending of remittances by household members;
  10. Ordination of income sources from highest to lowest.
- Part A of the baseline survey recruits 840 households, which is 90 more households than envisioned in the final sample. This provides the study with flexibility in matching households in the intervention and control samples once initial analysis is done on the Part A data and accounts for potential drop-outs due to high levels of infant mortality. Starting in June, Part B of the baseline survey will be administered in 750 households, which will include the serum retinol assessment of young children, anthropometry<sup>1</sup> of young children and their principal caregivers, and morbidity, followed by a detailed 24 hour consumption survey in half of the sample.
  - The survey instrument was translated from Portuguese into Chuabo, the dominant local language. All enumerators are implementing the survey in Chuabo, except in rare cases where the interviewee prefers to conduct the survey in Portuguese. The Portuguese version of the survey instrument is attached as Annex A.
  - The use of the declaration of consent has gone smoothly. The number of refusals to participate has been less than 10 families during the home visit once households have been recruited in community or farmer group meetings. Two reasons encountered for refusal are lack of interest on the part of either the man or the woman the household and belonging to religions against blood being taken.
- Four new agricultural extension agents, dedicated to project objectives, have been posted in their respective villages and have initiated extension and research activities in collaboration with their OVATA colleagues.
- Each intervention district (Namacurra, Mopeia) has two extension agents, who are now residing in their respective villages. Prior to going to their post the extension agents received one week of training from OVATA staff on group formation techniques and 1 day of practical training in rapid and conventional multiplication techniques for sweetpotato from Sr. Sandramo of SARNET/Zambézia.

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<sup>1</sup>Note that it was originally envisioned that an initial anthropometric assessment would be done in Part A of the baseline survey. However, it was not possible to import equipment in time for 2<sup>nd</sup> of January start date.

- The first major planting season for sweetpotato is from end of December through March. The implementation of the program has faced many challenges, due to transport (motorcycles only arrived mid-January) and weather problems. The rains were late in arriving, starting only during the 2<sup>nd</sup> week of January, and in 2 sites practically stopped for three weeks in February. More widespread rain began to fall during the 2<sup>nd</sup> week in March and extensionists are working hard to take advantage of this window of opportunity to successfully establish a sweetpotato multiplication plot in each enlisted group.
  - Extension personnel have had to identify existing and assist in the formation of new farmer groups to obtain adequate numbers of participating families with young children. In one site, Malei, the majority of existing groups were dominated by established, older families with few young children. Some of these groups were convinced to recruit young members into the existing structure.
  - Each extension agent has now completed a detailed listing of all the individual members of all groups and noted whether or not the member and his/her family is a potential candidate for the accompanying study. The number of groups with whom the each extensionist works varies from 10 to 19 groups. Each of these groups will have received sweetpotato material to multiply on their common group plot before the end of March 2003. By June of 2003, each group should have sufficient planting material for each group member to establish their own plots at the household level.
  - Each extension agent has assisted one farmer's group in establishing a rapid multiplication plot of sweetpotato (emphasize vine production for further distribution over root production) and one research plot of new sweetpotato varieties, including those with higher dry matter content than existing orange-fleshed materials. One research plot (in Malei) was lost due to drought conditions following initial planting. That plot has been re-established. Two of the four rapid multiplication plots are doing well; two are below average due to drought and the inexperience of both the farmer's group and the extension agent in question.
- The establishment of the project continued to progress, with the finalization of office space with World Vision, the opening of two of the three field offices, the arrival of the procured motorcycles and anthropometric equipment, and the finalization of the sub-contract agreement between Michigan State and World Vision.
- The sub-contract agreement between MSU and World Vision was finalized on 17 February 2003. This means that extensionists can now be hired for the entire project period, instead of on a temporary basis. This will greatly facilitate the running of the extension activities.
  - Simple houses were rented at the Mexixine and Luala sites to be used as sites where project enumerators and senior research staff could stay when conducting field work. Each house needed simple rehabilitations, particularly of the sanitary facilities. The Luala site is positioned in between Posto Campo and Catale and as such serves the two research sites in Mopeia. No such houses were available in Malei and a decision was made to construct a mud-walled house with a tin roof. That construction should be completed by the end of March 2003.

- After many significant delays and broken promises on the part of the provider, the four motorcycles for the agricultural extensionists finally were delivered in mid-January. Up until that time, the extensionists had been struggling to get work done on bicycles given the distances at times involved. The extension agents were given a 2.5 day course on maintenance and safety before going to the field with their new bikes. This training supplements the 2 week required licensing course they received in October.
- The anthropometry (digital scales, portable length/height boards, arm circumference tapes) equipment arrived in mid-January in Maputo. The importation duties and fees were high (21% of total value). The equipment is due to be driven to Quelimane when the project cars become available.
- Jan Low, Nadia Osman, and Armanda Gani attended the International Vitamin A meetings, held every 18 months, during the first week in February. The Vitamin A meetings provided an opportunity to discuss technical issues related to project implementation with other collaborators, such as HKI, and interact with many nutritionists. On the third day of the conference, Low had a 10 oral presentation in the section dedicated to Dietary Approaches. The title of the presentation was *The Potential Impact of Beta-Carotene-Rich (BCR) Sweetpotatoes on Vitamin A Intake in Sub-Saharan Africa*. It was based on a paper written previously by Low in collaboration with Tom Walker and Robert Hijmans of the International Potato Center (CIP) as well as including a summary of the current status of breeding work on sweetpotato being sponsored by CIP.
- Cheryl Jackson, nutrition policy advisor for USAID Washington, D.C. in the section contributing to the TSNi project, had an opportunity to visit the project site for 3 days at the end of February. Ms. Jackson was able to attend a baseline interview with the research team, make a day-long field visit to see extension work in Posto Campo, and visit a district level market where monthly price data are being collected. We were delighted to have the chance to show her the progress to date, introduce her to the wonders of Zambezian prawns, and exchange ideas. We appreciate her understanding of the situation in Mozambique and the challenges we face in project implementation.

To better capture what has been accomplished, Annex B provides a description of 10 scanned photographs taken during the second three months of the project, which will be forwarded as attachments to this report.

#### 4. Key Challenges

A general rule of thumb is that it takes around 6 months to get a project of this size set up and running. Given the logistic constraints we have faced, it is likely that it will take us until the end of March 2003 before all the major components are in place.

A major drawback has been the unexpected poor performance of the procurement firm and their sub-contracted clearing agents. The two project trucks finally arrived in country 2<sup>nd</sup> of January, but the clearing agent did not submit the necessary paperwork until the 15<sup>th</sup> of January. When the clearing agent was notified that paperwork had to be re-done concerning one of the two vehicles, by the time re-submission occurred the new customs law had gone into effect, with duty raised from 5 to 30% for the type of

vehicle we had ordered. While the first truck was valued at 5% duty, the second was valued at 30%, which, needless to say, was not included in the budget. Attempts to convince customs to alter their decision so far have failed. However, as of last Friday, the procurement agent has agreed verbally (we are awaiting written confirmation) that they will cover the additional cost as it is their responsibility that the clearing agent did not perform in a timely manner.

World Vision has kindly continued to let us use two of their old vehicles, which along with the use of the project coordinator's personal car, has enabled the baseline survey to be undertaken and planting material to be delivered to farmer's groups. For this, TSNI is truly grateful to have such an cooperative and understanding partner. However, older vehicles have significantly more breakdowns and have been consuming significantly higher amounts of fuel than would be the case with new vehicles.

The weather has proved to be unpredictable. During the course of the survey we have run into both extremes — having to evacuate one day early out of our Mexixine site because the access road was flooding to having to replace a research trial when there was literally no rain for 3 weeks during the height of the “rainy” season. These conditions underscore why the two intervention districts we chose often have widespread seasonal food insecurity and high levels of child malnutrition.

On the staffing front, we had one setback with the unexpected departure of Leonardo Lourinho as the administrative officer at the end of December. His departure, for a more lucrative opportunity, was in the stipulated 3 months probation period. However, having just reached the point where he could handle a major portion of the accounting burden, his departure had significant repercussions on amount of time the project coordinator could spend on all non-administrative aspects of the project. After many interviews, a suitable replacement candidate, Nascimento Marcizal, joins the project on 10<sup>th</sup> of March.