

TOWARDS SUSTAINABLE NUTRITION IMPROVEMENT IN RURAL MOZAMBIQUE

TSNI Summary Progress Report #1: 15 September - 25 November 2002

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.

4. Major Accomplishments

The project has made significant progress during the past two months designing its work plan for the coming year, hiring key senior project personnel, identifying project sites, establishing and meeting with National and Provincial advisory groups, meeting with community leaders followed by general meetings

with the communities selected for intervention, hiring agricultural extension agents, beginning the interviewing process for remaining staff, and designing the baseline questionnaire. In addition, the project's research methodology and process for obtaining consent from research subjects was approved by the Bioethics Committee for Health in Mozambique and by MSU's Committee on Research Involving Human Subjects.

Each of these accomplishments is briefly described below:

- The detailed plan for activities in the coming year is presented in Annex A. The project will need to work with or establish new farmers groups, identify 500 intervention and 250 control families; assist intervention families in establishing sweet potato plots, complete the baseline survey and preliminary analysis of the data from that survey, operationalize the extension system, conduct trials for improved nutrition practices and design a social marketing strategy.
- Key senior staff members have been recruited:
 - Nadia Osman, a Mozambican who recently completed her Master's degree in Nutrition at the University of Sheffield in England, joined the project as the Principal Field Supervisor on 1st of October. Ms. Osman has preliminary acceptance for doctoral studies in Nutrition at the London School of Tropical Hygiene and Medicine. She will use project data for her dissertation. Residency requirements of the Phd program will require her to spend September through November 2003 in England during the project period.
 - Armanda Gani, a Master's level nutritionist with the Ministry of Health, will be working part-time on the project, and aspires to do further studies using the TSNI data set. Ms. Gani assisted in identify MISAU personnel to serve on the TSNI advisory group and organized the first advisory meeting, held in Maputo on 26 October 2002. Ms. Gani conducted a study of feeding practices in selected areas of Zambézia in 2001, and presented the results of that study at the advisory group meetings in Maputo and Quelimane.
 - Rosanna Francisco, a bachelor's level agronomist, was hired by World Vision to manage the agricultural component of the project. Rosanna led the interview process, along with senior colleagues from World Vision, for hiring four agricultural extension agents. All new hires are mid-level technical staff trained within the past 2 years at one of the two agricultural institutes in the country, Boane or Chimoio.
 - Eugenia Raposo, a Nutritionist in the Provincial Directorate of Health, serves as the liaison between the project and the Ministry of Health at the provincial level. She will participate part-time in the project, assuring coordination of health and nutrition extension and research activities.
 - Leonardo Lourinho, Assistant Supervisor and Data Entry Manager, has extensive experience in logistics and office management. He will assist in procurement, logistics, and financial aspects of the project, in addition to supervising the data entry process.
- Hiring of junior staff is in progress:
 - All junior staff candidates whose curriculum vitae meet minimum requirements sit a written exam testing their math and writing skills, and

- an oral interview during which questions relating to their level of knowledge and degree of experienced are asked.
- Four agricultural extensionists have been hired by WW and are currently undergoing two weeks of motorcycle training before their licenses are issued. These staff will assume their field posts in early December.
 - Potential candidates for the five nutrition extension agent positions have been interviewed. For several of these positions, candidates are mid-level technicians in nursing or preventive medicine whom the Provincial Directorate of Health is willing to assign to the project for its duration.
 - Applicants for the five enumerator/data entry positions have completed their written exams. Nine applicants were selected for oral interviews. Several candidates recently completed working on the National Agricultural Survey.
 - One driver has been temporarily hired to drive the WV vehicle on loan to the project until the project vehicles arrive towards the end of the year.
 - One messenger/office cleaner has been hired to guard the temporary office space within the WV compound.
- On October 22nd, the project held a seminar at the Provincial Directorate of Agriculture for Zambézia to introduce the project. Twelve persons attended, representing provincial level government personnel, World Vision staff, the representative for SARRNET in Zambézia, and the chair of the provincial level SETSAN (Food Security and Nutrition Committee) group. These meetings will be repeated every six months to update stakeholders on project findings. The Agenda for the seminar is provided in Annex B.
 - On November 4th, the project held the first meeting of the Technical Advisory Group in Maputo. The Advisory Group consists of senior level professionals in the area of health, nutrition, agriculture, and agricultural economics who have been asked to review research protocols and project documents twice a year. Advisory Group members come from both institutions directly involved in the study and those not directly involved but interested in the subject area. At this meeting, the project was introduced, background information was presented to justify the need for such a project, the research protocol was discussed, and a draft of the baseline questionnaire was reviewed. The agenda for the day-long meeting and a list of invitees is provided in Annex C. Two thirds of the invited members were able to attend the first meeting.
 - On October 31st, Jan Low, Nadia Osman, and Armanda Gani were invited to attend the session of the Comissão Nacional de Bioética para a Saúde (National Bioethics Commission for Health) to clarify questions related to methodology being used to assess nutritional status. After evaluating the protocol, the commission approved the study, with the only recommended modification being an additional paragraph to the declaration of consent explaining to mothers why we are collecting blood to analyze their hemoglobin status.
 - On November 4th, the University Committee on Research Involving Human Subjects' (UCHRIHS) of Michigan State University completed its full review of the research protocol, and approved the project (IRB approval number 02-406). The UCRIHS approval is valid for one calendar year, after which

any on-going projects such as this must re-submit their documents, informing the committee of any changes or difficulties that may have occurred. The final version of the declaration of consent, containing modifications recommended by review bodies, is provided in Annex D.

- Intervention sites were identified in Mopeia and Namacurra Districts based on field visits, soil maps, and conversations with WV personnel familiar with the area. As part of the familiarization process, Armanda Gani (MISAU) and Eugenia Raposo (Provincial Directorate for Health) accompanied Jan Low, Nadia Osman, and Rosana Francisco to introduce the project to key district leaders and health personnel. This was followed by three meetings in selected localities with local government and religious leaders to explain the objectives of the project and seek their collaboration in informing their communities. On November 7th, 17 leaders from the three selected localities for Mopeia (Lualua, Posto Campo, and Catale) attended. On November 8th, 22 community leaders and 8 members of the community attended an equivalent meeting in Malei sede (Namacurra District) in the morning, with 50 leaders and 37 community members attending the informational meeting in Mexixine in the afternoon.

- Meetings with leaders were followed by community level meetings, of which half have now been completed. Each meeting had the following structure:
 1. Introduction of the Project Staff, with a brief description of their respective institutions and their role within the project.
 2. Introduction of key community leaders
 3. Description of project time frame
 4. Description of project sites for intervention
 5. Discussion of the objective of the project & the three pathways to be used to achieve those objectives
 6. Presentation of a short community theater piece in Chuabo, in which the actors debate whether the project is worth participating in
 7. Responding to questions about the goals of the project
 8. Discussion of why children and mothers will be measured, what measurements will be taken (weight, height, blood), and where the measurements will be taken (blood at health posts).
 9. Responding to questions regarding household selection and measurement.

Meetings used visual materials (cloth with a sweet potato design, enlarged pictures) to demonstrate the new varieties, and had key information regarding the duration, framework & methodology of the project on flipcharts in Chuabo. A power point printout copy of the material presented on flip charts is provided in Annex E.

Community leaders did an excellent job informing the community that attendance by women with small children was particularly encouraged. Attendance was better when meetings were scheduled in the morning rather than the afternoon.

Attendance figures (not including children) by gender are as follows:

Date	District	Locality	Village	# Women	# Men
14 Nov 02	Mopeia	Catale	Morais	180	78
14 Nov 02	Mopeia	Catale	Raposo	36	44
15 Nov 02	Mopeia	Posto Campo	Condini	87	96
15 Nov 02	Mopeia	Posto Campo	Mushenge	28	26
16 Nov 02	Namacurra	Malei	Funganha	76	22
21 Nov 02	Namacurra	Malei	Navidongo	27	24
22 Nov 02	Namacurra	Mexixine	Yakota I	85	71
22 Nov 02	Namacurra	Mexixine	Namatida Central	72	41
23 Nov 02	Namacurra	Malei	Zuere	34	10
23 Nov 02	Namacurra	Malei	Modo	21	17

To better capture what has been accomplished, Annex F provides a description of 15 scanned photographs taken during the first two months of the project, which will be forwarded as attachments to this report.

5. Key Challenges

The major challenge the project faces is getting the agricultural extension component initiated and the first half of the baseline survey conducted before the major rains begin. The major rains typically last from mid-January through March. The agricultural extension personnel must have multiplication sites set up in December to permit village level distribution of sweet potato planting material in late December through January. The baseline survey needs to capture in particular the level of nutritional knowledge of selected households before beginning any major intervention.

On the research side, it has proven more difficult than expected to find control sites. These sites need to have similar agro-ecological and social characteristics to the intervention site, but without any beta-carotene rich sweet potatoes demonstrations and with a low probability of receiving sweet potatoes in the coming 2 years. The original sites visited were rejected because sweet potato distribution had already taken place in some areas and the selection of suitable areas is still underway. Once control sites are identified, leader and community level meetings will have to be undertaken.

On the administrative side, the project coordinator began working full-time on the project 1 September 2002, preparing and submitting necessary materials to the Human Subjects Review Committee and the Mozambican Bioethics Commission before departing for Quelimane by road on the 13th of September. She has been based in Quelimane as of 16th September 2002. The grant agreement between the Micronutrient Initiative and MSU was finalized in October, as was the agreement between the Rockefeller Foundation and MSU. Therefore, during the first month, it was not possible to order vehicles and purchase other necessary capital equipment and advance on staff hiring as

quickly as originally intended. The sub-contract agreement between MSU and WV has yet to be finalized, which has hampered the smooth initiation of extension activities.

Given that the two project vehicles are unlikely to arrive before the end of 2002, WV has kindly lent the project a vehicle to use in the interim. That combined with the use of Dr. Low's personal vehicle has permitted the project to initiate field work. However, it is unlikely that the baseline survey will begin until 2nd of January 2003, due to the above mentioned delays. Field conditions at this time will be difficult.

WV has provided office space for the project within its main structure in Quelimane. That space, however, will not be available until mid-December. In the interim the project is using temporary work space within World Vision.

The project manager is extremely appreciative of all the interim support provided by WV, the DPA, and the MSU Maputo Food Security project while the logistic and other administrative problems are being resolved.

ANNEX A. Calendar of Activities for Year 1

	Description of Category/Activity	Duration (days)	Date Begins	Date Ends
1	Estabelecimento do Projecto: Aspectos Administrativos (Project Establishment)	38d	Mon 16-09-02	Thu 31-10-02
1.1	Chegada da Dra. Jan em Quelimane (Arrival of Jan Low in Quelimane)	1d	Mon 16-09-02	Tue 17-09-02
1.2	Treinamento Administrativo de Dra. Jan (Administrative Training of Dr. Jan)	3d	Wed 02-10-02	Fri 04-10-02
1.3	Reuniao de Comite Nacional de Bio-Etica em Maputo (Meeting of the Mozambican Bio-Ethics Committee)	1d	Thu 31-10-02	Thu 31-10-02
1.4	Recrutamento dos Extensionistas (Recruitment of Agricultural Extensionists)	1d	Mon 14-10-02	Tue 15-10-02
1.5	Introduções a Nível Provincial (Introduction at the Provincial Level)	4d	Mon 21-10-02	Thu 24-10-02
2	Estudo de Base (Baseline Study): Parte A	113.06d	Mon 04-11-02	Fri 21-03-03
2.1	Revisao dos Questionarios (Revision of Questionnaires)	28.44d	Mon 04-11-02	Sat 07-12-02
2.2	Introducao as Comunidades (Community Introductions)	15.06d	Thu 07-11-02	Mon 25-11-02
2.3	Listagem dos Agregados Familiares (Listing of Potential Participating Households)	15.38d	Tue 26-11-02	Fri 13-12-02
2.4	Piloto do Questionario (Pilot Testing of Questionnaire)	2.69d	Thu 19-12-02	Sat 21-12-02
2.5	Treinamento dos Inqueridores (Enumerator Training)	6.69d	Mon 16-12-02	Mon 23-12-02
2.6	Estudo de Base (Baseline Study): Parte A	24.75d	Thu 02-01-03	Fri 31-01-03
2.7	Precos Relativos do Mercado (Relative Prices in the Market)	5.69d	Mon 02-12-02	Sat 07-12-02
2.8	Desenho de Sistema dos Entrados dos Dados com Leonardo (Design of Data Entry Programs with Leonardo)	4d	Mon 13-01-03	Thu 16-01-03
2.9	Digitacao dos Dados (Data Entry)	22.06d	Mon 03-02-03	Fri 28-02-03
2.10	Analise dos Dados e Relatório Préliminar (Analysis of Preliminary Report)	17.06d	Sat 01-03-03	Fri 21-03-03
3	Componente Agronómico: Extensao e Ensaios (Agricultural Component: Extension & Agronomic Trials)	102.38d	Mon 07-10-02	Sat 08-02-03
3.1	Estabelecimento nas Comunidades (Establishment of Extensionists in the Community)	11.38d	Mon 07-10-02	Sat 19-10-02
3.2	Preparacao dos Materiais de Formacao para Extensionistas Agricolas (Preparation of Training Materials for Extension)	4d	Tue 03-12-02	Fri 06-12-02
3.3	Treinamento na Formacao dos Grupos (Training in How to Form Farmers Groups)	5.69d	Mon 03-02-03	Sat 08-02-03
3.4	Treinamento Sobre Batata Doce (Training on Sweetpotato Production)	3d	Mon 09-12-02	Wed 11-12-02
3.5	Estabelecimento do Campos de Multiplicacao da Nova Material (Establishment of Multiplication Plots)	10.38d	Tue 19-11-02	Sat 30-11-02
3.6	Estabelecimento dos grandes centros de producao a nível comunitario (4) (Establishment of 4 larger production sites)	17.06d	Mon 16-12-02	Sat 04-01-03
3.7	Distribucao do material ja existentes aos Afs (Distribution of existing material to households)	22.06d	Mon 06-01-03	Fri 31-01-03
3.8	"Estabelecimento dos Ensaios ""on-farm"" das novas variedades" (Establishment of on-farm trials of new varieties)	10.69d	Mon 20-01-03	Fri 31-01-03
4	Componente Nutricional: Extensao e Pesquisa Qualitativa (Nutrition Component: Extension & Qualitative Research)	311.13d	Tue 15-10-02	Fri 31-10-03
4.1	Recrutamento das Extensionistas de Nutricao (Recruitment of Nutrition Extensionists)	9.69d	Tue 15-10-02	Fri 25-10-02
4.2	Consultoria sobre Marketing Social (Consultancy on Social Marketing)	17.06d	Mon 14-07-03	Sat 02-08-03
4.3	Preparacao dos materiais da Formacao (Preparation of Training Materials)	10.69d	Mon 17-02-03	Fri 28-02-03
4.4	Trenamento no Processamento por SARRNET (Training on Agro-processing by SARRNET)	11.38d	Mon 02-06-03	Sat 14-06-03
4.5	Trenamento com Especialista nas Mudanças de Comportamento (Training with specialist in Behavioral Change)	11.38d	Mon 17-03-03	Sat 29-03-03
4.6	Treinamento das Extensionistas de Nutrição (Training of Nutrition Extension Agents)	11.38d	Mon 07-04-03	Sat 19-04-03
4.7	Trabalho formando grupos e visitas individuais (Working on group formation & individual household visits)	88.31d	Wed 16-07-03	Fri 31-10-03

5	Inquerito de Base: Segunda Ronda: Consumo e Serum Retinol (Baseline Study: Parte B: Consumption & Serum Retinol)	206.75d	Mon 20-01-03	Tue 30-09-03
5.1	Preparacao dos Drafts dos Inqueritos e Protocolo (Preparation of Instruments & Protocol)	22.75d	Mon 20-01-03	Sat 15-02-03
5.2	"Retinol, Hemoglobina, HbA1c Frequencia e Morbilidade e Antropometria" (Collection of blood, food frequency, health data)	28.44d	Tue 06-05-03	Mon 09-06-03
5.3	Treinamento para o segunda parte (Training for 2 nd parte of survey)	6d	Mon 28-04-03	Mon 05-05-03
5.4	"2nd Parte: Consumo, Rendimento Familiar, Despesas" (Collection of consumption, income, and expenditure data)	50d	Mon 12-05-03	Fri 11-07-03
5.5	Digitacao dos dados (Data Entry)	39.81d	Mon 14-07-03	Sat 30-08-03
5.6	Analise dos dados (Data Analysis)	24.75d	Mon 01-09-03	Tue 30-09-03
6	Reunioes (Meegins)	183.69d	Fri 10-01-03	Sat 23-08-03
6.1	Sumário de Apresentação para o IVACG submetido (Submission of abstract to IVACG meetings)	1d	Fri 10-01-03	Fri 10-01-03
6.2	Encontro XXI IVACG (Vitamina A) (Attending Vitamin A Meeting in Morocco)	6.38d	Sat 01-02-03	Sat 08-02-03
6.3	Reuniao Internacional de Economistas Agrárias (Attending Intl Association of Agricultural Economists Meeting in Durban)	6.38d	Sat 16-08-03	Sat 23-08-03
7	Ferias ou Tempo dos Estudos (Holidays & Study Time)	238.88d	Mon 10-02-03	Sat 29-11-03
7.1	Jan Low (Potential Work Visit to States)	5.69d	Mon 10-02-03	Sat 15-02-03
7.2	Ferias: Jan Low	11.38d	Sat 02-08-03	Fri 15-08-03
7.3	England: Estudos: Nadia Ousman	73.94d	Mon 01-09-03	Sat 29-11-03

ANNEX B. Agenda of Provincial Level Awareness Seminar

**Agenda de Seminário
22 de Outubro de 2002**

**Direcção Provincial da Agricultura e Desenvolvimento Rural
Sala de Reuniões
Quelimane**

9:00	Registro	
9:05	Introdução	dr. Abdul César
Parte I. Necessidade de Intervenção e Pesquisa		
9:15	A Deficiência de Vitamina A: Importância em Percebê-la	dra. Nadia Osman
9:35	Perguntas de Clarificação	
9:40	Hábitos e Práticas Alimentares na Região Centro da Moçambique: Resultados de um Estudo Piloto em 2001	dra. Armanda Gani
10:00	Discussão	
10:15	Intervalo	
Parte II. Introdução do Projecto		
10:30	A Melhoria Nutricional Sustentável: Objectivos do Projecto e Metodologia da Intervenção e Pesquisa	Dra. Jan Low
11:15	Discussão	
12:00	Fim	

**ANNEX C. Agenda of First Meeting of the Technical
Advisory Group for TSNI and List of Group
Members**

**AGENDA
MELHORIA NUTRICIONAL SUSTENTÁVEL
4 de Novembro de 2002
Sala de Reuniões: Pensão Martins**

- 08.30** Registo de Participantes
- 08:45-08:55** Introdução dos Participantes e Agenda
- 08:55-09.25** Introdução do Projecto (Jan Low)
- 09:25-09:30** Perguntas de Clarificação
- 09.30-10.00** Metodologia de Pesquisa: Instrumentos, Amostra, Desenho e Avaliação do Estado Nutricional (Jan Low)
- 10:00-10:30** Intervalo
- 10:30-11.10** Resultados do Estudo de Hábitos e Práticas Alimentares no Centro do País (Armanda Gani)
- 11.10-12:15** Conhecimento Nutricional (Armanda Gani)
- 12:15-12:45** Discussão da Componente Agrícola do Projecto (Jan Low)
- 12:45-13:30** Almoço
- 13:30-14:30** Secções E e F: Avaliação das Técnicas de Medição dos Níveis de Consumo de Alimentos ricos em Vitamina A,e o Consumo Familiar nas Últimas 24 horas, respectivamente (Nadia Osman)
- 14:30-15:30** Secção H: Morbilidade (Armanda Gani)
- 15:30-16:00** Discussão Final

Members of the Technical Advisory Group at the National Level

Dr.	Martinho	Dgedge	Director Nacional da Saúde Adjunto	Chefe do Departamento de Saúde da Comunidade (Dept of Community Health)
Sra. dra. dra.	Joaninha Armanda Lourdes	Abudo Gani Fidalgo	Técnica Nutricionista Nutricionista	Repartição de Nutrição (MISAU) Repartição de Nutrição (MISAU) ANSA (Association of Nutrition & Food Security)
Dr.	Clara	Santos	Médica	PNUD (United Nations Development Program)
Dr.	Richard	Thomson	Médico	Instituto Nacional de Saúde (National Institute of Health)
dr. Dr.	Stephan Calisto	Meershoek Bias	Representante Director	Helen Keller International Instituto Nacional da Investigação Agronómico (INIA)
dr.	Higino de	Marrule	Chefe do Departamento de Análise das Políticas	Dept. da Análise das Políticas/DE (Dept. of Policy Analysis/Directorate of Economics/Ministry of Agriculture)
Dr. Enga.	Omo Hercyilia	Olupona Estrela	Director da Saúude Project Officer for Agriculture	Visão Mundial Visão Mundial
Dra.	Sally	Henderson	Directora Adjunto de Agricultura	Visão Mundial
Sr. Dra.	Vivian	Lisboa Steirtighem	Representante Oficial do Programa de Nutrição	SETSAN UNICEF-Moçambique
Dr.	Akossa	Assante	Oficial do Programa de Nutrição	OMS (World Health Organization)
Dra. Dra.	Lília Benedita	Jemisse Silva	Chefe de Repartição Responsável do Programa	Saúde Familiar (Family Health) Atenção Integrada às Doenças da Infância (AIDI) (Integrated Attention to Infant Diseases)
Dr.	Mouzinho	Saíde		Repartição de Educação para a Saúde (Dept. of Health Education)
Dra. dr.	Maria Anabela	Andrade Zacarias	Representante Chefe do Dept. de Raízes e Tubérculos	SARRNET INIA

ANNEX C. Approved Declaration of Consent (English Version)

The proposed project includes a study that has the goal of evaluating an intervention strategy based on the use of foods rich in Vitamin A as a means of assuring an improvement in the diversity and quality of the diet for the entire family and in the nutritional status of children under five years of age. To achieve those objectives, the project will introduce new cultivars of crops and fruits rich in micronutrients, particularly vitamin A. The project will also work closely with families to improve the use of foods already existing within the household.

The study will be based in the districts of Namacurra (in the Localities of Maxixine and Malei), and Mopeia (in the Localities of Posto Campo and Lualua), and in Nicoadala (in the Localities of Maquival-Sede and Nangoela) and will work with 750 families for a period of two and a half years.

To successfully implement this study it will be necessary to collect blood samples from young children four times during the course of the study to monitor their nutritional status. The blood sampling consists of a drop of blood collected from a finger prick and placed on a piece of filter paper or in a piece of glass (cuvette). If we find that the food the child is eating is not maintaining the level of vitamin A status he or she needs, we will make sure your child will receive the proper treatment at the nearest clinic.

Blood samples used to measure hemoglobin status also will be collected from their mother two times, once at the beginning of the study and once at the end. This will indicate to us if mothers are strong enough to care for themselves and their families and will help see whether the status of the mothers improved during the two-year period.

These children and their respective mothers will not run any risk of being contaminated, because only disposable instruments will be used to prick the finger for the collection of blood. All proper hygiene and bio-safety procedures will be followed as well.

All the statistical information of an individual nature collected by the project enumerators is strictly confidential, that is to say we will not give anyone else this information and the results will not be published in a way that identifies any individual.

The mother/responsible for the education of the child is free to agree to participate or not in this proposed study. Whatever your decision, your access to normal attendance at the local health facility will not be affected.

If you ever need to obtain additional information about the study, you can contact (or ask your extension agent to help you contact) the coordinator for the project who is based in Quelimane:

Jan Low
Office in the building for World Vision
C. Postal 139
Quelimane
Telephone: 082-315916 (cellular) or 04-215936

In the case you have questions concerning your rights as study participants or express your concerns about the study, you can contact directly or ask your extension agent to help you contact:

Dr. Ashir Kumar, MD.
Chair of the University Committee on Research Involving Human Subjects
Address: Michigan State University
204 Olds Hall
East Lansing, MI 48824-1039
USA
Telephone: 1-517-355-2180 / Fax: 1-517-432-4503 E-mail: ucrihs@msu.edu

Also, below we are going to leave with you a list of names and contact information for other key persons and institutions involved in the project.

I have been informed of the objectives and procedures for the present study and want to participate during the two and a half years. I authorize the collection of blood samples from me and from my child.

Signature (or mark) of the mother/responsible for the child's education:

Signature of the supervisor: _____

Date: _____, ____/____/2002

Other contacts:

Sonia Khan
Director, Nutrition Division
Ministry of Health
Maputo
Telephone: 01-321738

Armanda Gani
Nutrition Division
Ministry of Health
Maputo
Telephone: 01-321738

Brian Hilton
Director, OVATA Project
World Vision
Quelimane
Telephone: 082-592074

Maria Andrade
Representative of SARRNET/INIA Roots and Tubers Program
Maputo
Telephone: 01-461610

ANNEX E. Introductory Presentation in Chuabo in Intervention Communities

Annex E.

MELHORIA NUTRICIONAL SUSTENTÁVEL

MIKALÊLO DOKALÍYA DODJA
DOGONÉLA

EQUIPA

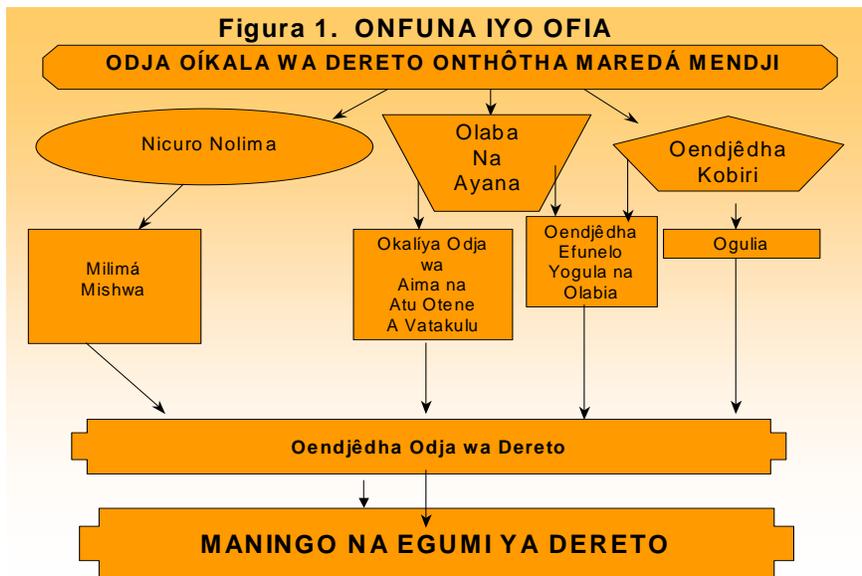
- Jan Low-- Coordenadora
- Nádia Osman-- Nutricionista
- Rosana Francisco-- Agrónoma
- Leonardo Lourinho-- Administradora
- Eugénia Raposo- Nutricionista-- DPS
- Parceiros
 - MISAU -- INIA
 - MSU --SARRNET
 - VISÃO MUNDIAL --DPA
 - HKI

Lini?

- Início: Setembro 2002
- Fim: Fevereiro 2005

Ovi?

- Distrito: Mopeia
 - Lualua
 - Catale
 - Posto Campo
- Distrito: Namacurra
 - Malei
 - Mexixine



MANINGO NA EGUMI

- Nina None Daví?
 - OPIMA MUARI MWA MIELE MITANU NA MODHA
 - NELOWILEA (REPETIR) OPIMA VIAJI VINAYI

OPIMA AÍMA NA AMAMBALI

- Makilos
- Imo
- Makelelo ya Nicámy
 - Ebuno
 - Vangono
 - Enfermeira o Hospital

ANNEX F. List of Attached Photographs

1. 3 Orange-flesh sweet potato believers– Jan Low, project coordinator, Calisto Bias, Director of INIA, and Maria Andrade, SARRNET representative – at Low's *despedida* (going-away party) to mark her departure for Quelimane and the beginning of the *Towards Sustainable Nutrition Improvement Project*.
2. TSNI team members with local health personnel in front of the health facility in Malei Sede (Namacurra District). From left to right: Nadia Osman, nutritionist (TSNI), Eugenia Raposo, Provincial Nutritionist (Ministry of Health), Health technician Malei, Rosana Francisco, agronomist (World Vision), Armanda Gani, nutritionist (Ministry of Health), and World Vision malaria extension agent. Armanda Gani, representing the Ministry of Health at the national level, introduced the project and the team to all district level Health and Administrative personnel during her field visit in October 2002.
3. The coastal zone near Mexixine, one of the research sites, is shown in this photo. Coconut is a dominant crop in this area, with manioc and rice being the major staple foods.
4. Participant testing one of the various sweet potato products served at the Provincial Level Awareness meeting held at the Provincial Directorate of Agriculture and Rural Development on 22 October 2002.
5. Meetings were held in all intervention sites with community leaders to explain the project and asking for their support in organizing community meetings. The audience at the leader meeting held in Malei Sede is shown here.
6. Leader's meeting held in Mexixine.
7. Part of the audience at the Mexixine leader's meeting listening to the Coordinator explain how the project will operate.
8. Nadia Osman, project nutritionist, explaining why children need to be measured during the course of the project at a community level meeting in Condini (Mopeia District).
9. Audience listening to Osman's presentation in Condini.
10. Antonieta Farijão, project extensionist and Mariamo Omar, Chuabo teacher for senior staff, presenting a theater piece written by Nadia Osman in which the actors debate whether or not to participate in the project.
11. Part of the audience in Mushenge watching the theater performance. The performance was a very effective way to ensure that the audience understood the objectives of the project.
12. Attendees of introductory community meeting in Zuere (Modo area), Malei District standing in front of the primary school where the meeting was held.
13. An example of the terrain in Mopeia district, in which households often are spread out, with significant amounts of secondary forest remaining. Communities have limited access to health services in these sites.
14. Woman in Morais area (Mopeia district) thinly slicing sweet potato before drying in the sun. Once dried, the sweet potato can be stored for several months and it is principally used to prepare porridge.
15. Construction of the first seed bed for rapid multiplication of beta-carotene rich sweet potato by the "Independente" farmer's group in Morais B. This group will produce planting material for the surrounding area.