Nutrition Enhancement through Orange-Fleshed Sweetpotato:

Present Progress and Challenges in 2013

Feed the Future Research and Development Program
Eastern and Central Provinces, Chipata, Zambia

8 October
Kumasi, Ghana
Project Focus

improving diet diversity, increasing vitamin A intakes, and reducing food insecurity in Eastern Province and parts of Central Province.
Objectives

**GENERAL PURPOSE**

To contribute to increased frequency of intake of vitamin A rich foods, especially of women and children under 5 years

To improve overall household food security & diet diversification through dissemination of OFSP

To improve production, conservation, and utilization techniques linked to increased nutritional knowledge
Objectives

SPECIFIC OUTCOMES

- 15,000 households growing and consuming OFSP
  - 75% women, children
- Improved foundation “seed” management
  - Vine conservation
  - Decentralized multipliers
- Empowerment of women in rural households
  - Added nutrition and market interventions
- Establishment of active, knowledgeable sweetpotato community
Implementation

SEED SYSTEM DEVELOPMENT
- Establishment of quality foundation “seed” system
- Creation of trained farmer vine multiplier network
- Adoption of improved vine conservation methods

NUTRITION AND MARKET INTERVENTIONS
- Nutrition training on OFSP utilization, processing
- Establishment of active, knowledgeable sweetpotato community
- OFSP demand creation and market development
Field Research Sites

2012 / 2013 SEASON

- OFSP variety demonstration sites
  - Eastern – Lundazi (7), Katete (8), Nyimba (1), Petauke (3), Chipata (11)
  - Central – Kapiri (14), Chibombo (1)

- Vine Multiplication
  - Research stations
    - Mansa (Northern)
    - Mt Makulu (Central)
    - Msekera (Eastern)
  - Decentralized vine multiplier farmers
    - Eastern – 314
    - Central – 25
Major achievements (2013)

VINE MULTIPLICATION

- Establishment of sand hydroponic system for multiplication of disease-free material
- Planting and maintenance of *in-vitro* plantlets (4 varieties)
- Development of screenhouse sanitation protocols and pesticide safety staff training
Major achievements (2013)

JOINT DEMONSTRATION PLOTS

- Demonstration of all orange-fleshed sweetpotato varieties to local “Chingovwa”
- Additional 25 plots with inclusion of previous season’s locations
- OFSP awareness creation in new communities
Current Zambian varieties in demos

‘Twatasha’

‘Zambezi’

‘Orange Chingovwa’

‘Kokota’

‘Olympia’

‘Chingovwa’
Major achievements (2013)

VINE MULTIPLICATION

- Establishment of sand hydroponic system for multiplication of disease-free material

  Initiated May 2013

- Hiring of Moffat Lungu for maintenance of screenhouse

  Dissemination of disease-free planting material for DVMs and newly trained farmers (2,500 cuttings to date)
Major achievements (2013)

MARKETING of TRAINED DVMs

- Roadsign construction and placement with 150 DVMs within target districts

- Distribution of 40 treadle pumps with OFSP production at the onset of the rainy season

- Standardization of pricing / quantities of OSFP vines
Major achievements (2013)

STANDARDIZATION of VINE DISTRIBUTION

- SP vines generally given/sold in 50-kg volume bags packed by farmer producers – leading to difficulties in standardizing sales

In 2012 growing season, measured weights and counts of SP vines contained in standard-sized 50-kg volume bags (N=98)

CONCLUSION: weight data with vine counts can be used to develop standard protocol for DVMS to sell OFSP varieties
Major achievements (2013)

NUTRITION EDUCATIONAL TRAINING

- Training of Trainers in target districts
  - 44 [28F, 16M] participants from different institutions

- Week-long course in theory and cooking practicals
- Conducted by Senior Nutritionist, Dr. Agnes Mwangwela (Bunda College, Lilongwe, Malawi)
Major achievements (2013)

MARKET DEVELOPMENT

- Frequent monitoring of sweetpotato market data in target districts
- Community awareness with on-farm taste evaluations with farmers

- Demand creation through field days and OFSP variety demonstrations
- OFSP tasting and focus-group discussions with traders and producers
- Recipe development for roadside markets
  - Fried products like fritters, chips, crisps
Major achievements (2013)

SUCCESSFUL PROMOTIONAL EVENTS AT AG SHOWS

- Awarded first and second prizes for displays at agricultural shows within 5 target districts and Eastern Province
  - Kapiri, Katete, Petauke, Lundazi, Chipata

- Demand creation through field days and OFSP variety demonstrations

- Additional feedback from consumers and farmers on consumer preferences

- Additional awareness creation on post-harvest technologies and OFSP recipes
Major achievements (2013)

NATIONAL AGRICULTURAL SHOW DISPLAY

- Tremendous interest from Lusaka community on OFSP varieties
Major achievements
CAPACITY BUILDING

- Partner collaboration
  - Training of vine multipliers with CARITAS, RICH, RFDP
  - Total of 350 DVMs in target districts
- Technical training with ZARI
  - Hands-on experience with CloneSelector software
  - Weeklong TOT training of national partner, Simon Mudenda in Tanzania
Major achievements
CAPACITY BUILDING

- Partner collaboration
Challenges

- Acceptance of orange-fleshed sweetpotato varieties – what is orange? Variety mixing
- Msekera pest and disease outbreak
- Difficulties in “cleaning” diseased material
- Weevil pests and virus outbreaks in DVM nurseries resulting in low vine quantities
- Lagging expansion of DVM nurseries

- Building networks between traders and producers
  - No standard pricing
  - Limited OFSP knowledge with traders
  - Need for communication
Challenges

- Sand hydroponic system with nutrient deficiency problems
- Limited multiplication by trained DVMs

- Delayed distribution of disease-free material for DVMs
- Community awareness of DVM locations
- Lack of knowledge of food-based knowledge of nutritious foods
- Delayed distribution of treadle pumps and contracts with DVM farmers
Challenges

- Adverse weather patterns – drought, storms

Water scarcity due to long dry periods
Success beyond project challenges

OFSP CONSUMPTION IS HIGH!

- Household survey to investigate consumption frequency of OFSP for those who grew the crop this growing season
  - Sampling in all target districts (N = 123) in Sept, October
- Related to the consumption feedback from farmers?

- Interestingly, ALL introduced OFSP varieties have been accepted within target areas
- Great demand from outside of rural community presence
  - Foreigner preference
  - Increased awareness about importance of nutrition among educated population
Year 3 Projected Activities

SEED SYSTEM and VINE MULTIPLICATION

- Irrigation technology improvement (treadle pumps, N = 100)
- Training and demonstration for clean seed maintenance
  - Net tunnels – Research stations (3), FTCs (5), DVMs (45)
  - Increased distribution of disease-free OFSP vines (> 30,000)
Year 3 Projected Activities
MARKETING and NUTRITION

- Selection, training, and stand design for OFSP marketeers
- Introduction into Lusaka market for commercialization
- Roadside market development
Year 3 Targets

MAWA for nutrition reinforcement

8,000 households

Voucher distribution

Trainings

DVM awareness
Training decentralized vine multipliers (lead farmers) on pest and disease management

Demonstrations – net tunnels, ridging, rouging, spacing

Elimination of diseased material from seed multiplication nurseries to prolong quality planting material