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

INTEGRATING Orange fleshed SWEETPOTATO IN ZAMBIA

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**

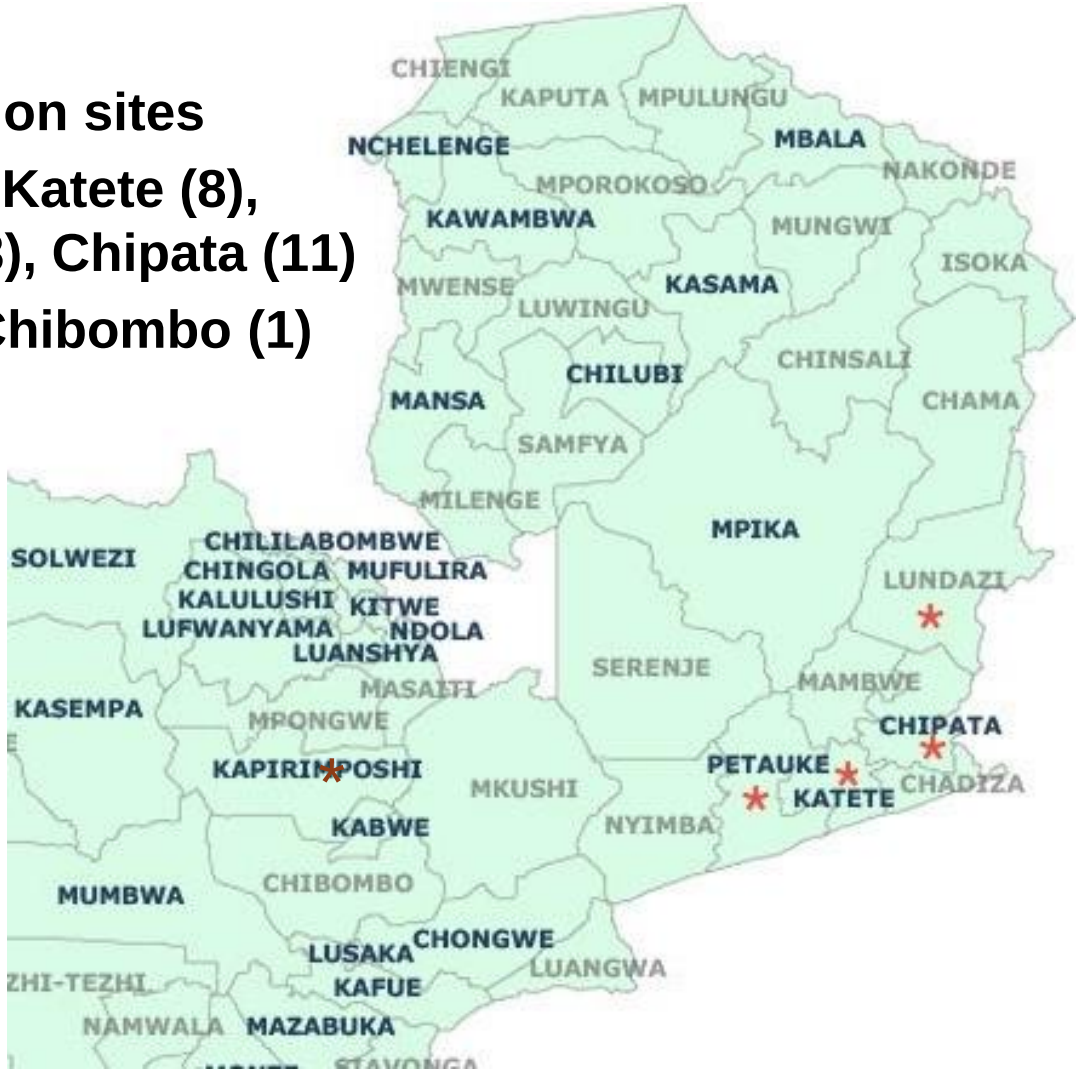
NUTRITION AND MARKET INTERVENTIONS

- **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

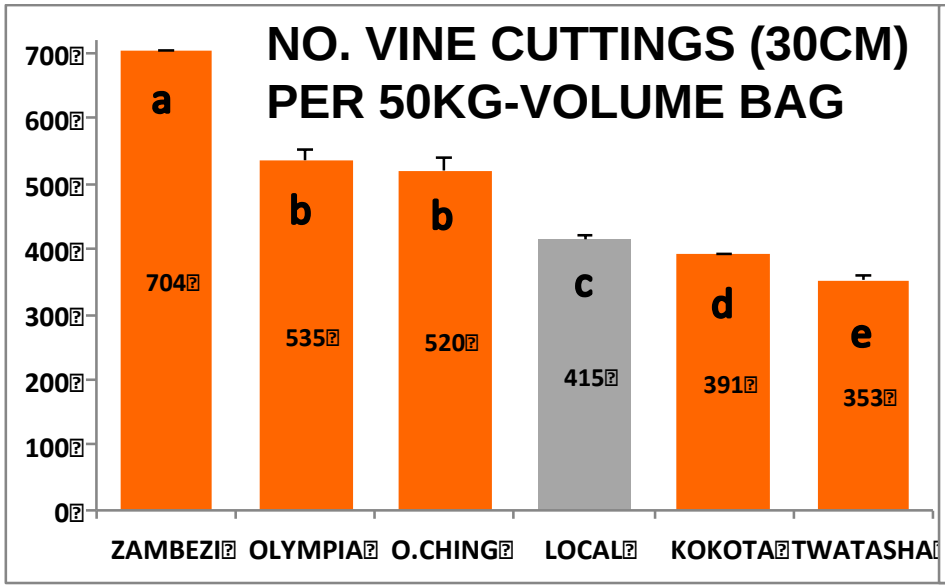
- Standardization of pricing / quantities of OSFP vines

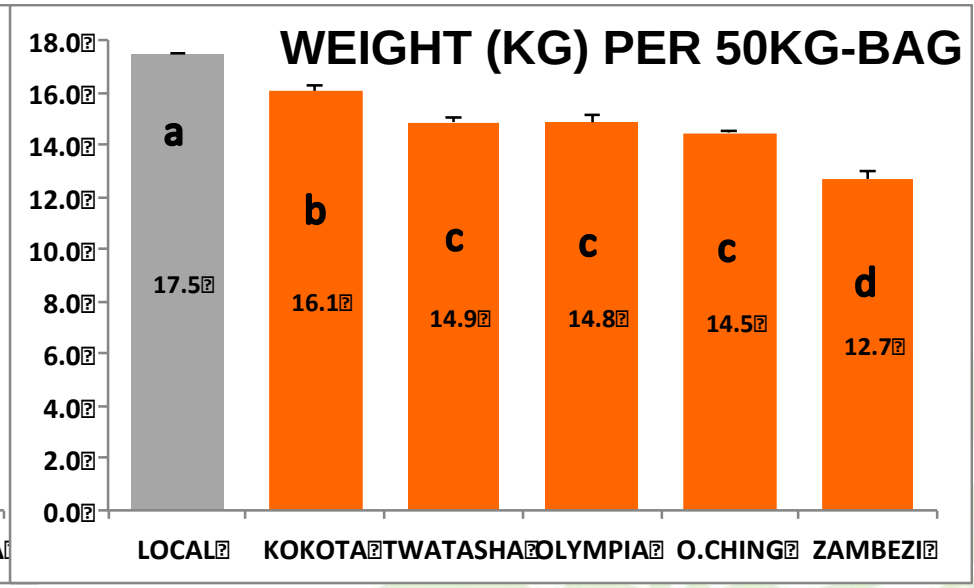
along contracts for root and vine

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

PCV

RICH

MAL

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

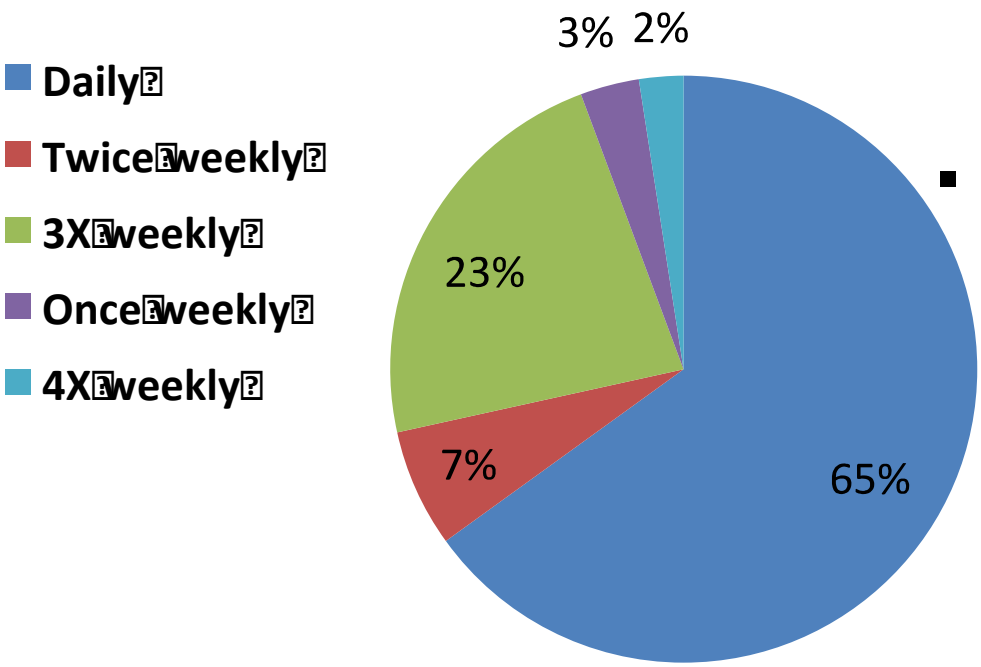
- Adverse weather patterns – drought, storms

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**

SPHI Sweetpotato for Profit and Health Initiative

Acknowledgements

WorldFish CENTER

USAID FROM THE AMERICAN PEOPLE

CGIAR

ZARI Zambia Agriculture Research Institute

HarvestPlus

RFDP

COMACO

Rural Initiative For Children's Hope (RICH)

Year 3 Targets

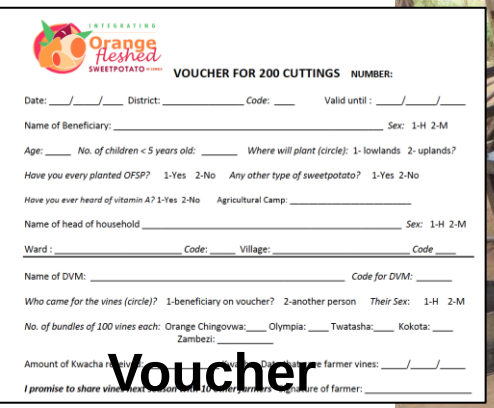
MAWA for nutrition reinforcement

8,000 households

Trainings

DVM awareness

Voucher distribution



INTEGRATING Orange fleshed SWEETPOTATO

VOUCHER FOR 200 CUTTINGS NUMBER:

Date: ___/___/___ District: _____ Code: ___ Valid until : ___/___/___

Name of Beneficiary: _____ Sex: 1-H 2-M

Age: ____ No. of children < 5 years old: _____ Where will plant (circle): 1- lowlands 2- uplands?

Have you every planted OFSP? 1-Yes 2-No Any other type of sweetpotato? 1-Yes 2-No

Have you ever heard of vitamin A? 1-Yes 2-No Agricultural Camp: _____

Name of head of household _____ Sex: 1-H 2-M

Ward : _____ Code: ____ Village: _____ Code ____

Name of DVM: _____ Code for DVM: _____

Who came for the vines (circle)? 1-beneficiary on voucher? 2-another person Their Sex: 1-H 2-M

No. of bundles of 100 vines each: Orange Chingovwa:____ Olympia: ____ Twatasha:____ Kokota: ____ Zambezi: _____

Amount of Kwacha r... farmer vines: ____/____/____

I promise to share vine... Signature of farmer: _____

Projections for next year

- 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