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Reaching and Engaging End Users with OFSP: Learning lessons for Dissemination in Uganda and Mozambique

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Challenge: How bring a biofortified crop (OFSP) to consumers

Aim: Identify best practices to maximize the dissemination and nutritional impact of biofortified beta-carotene rich sweetpotatoes

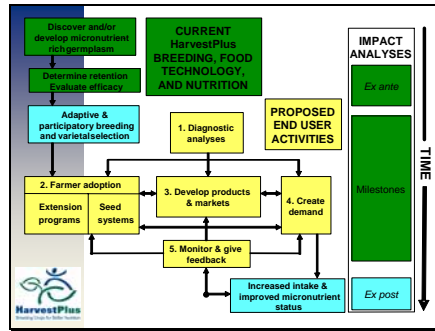
HarvestPlus supported by Bill and Melinda Gates Foundation 2006-2010.

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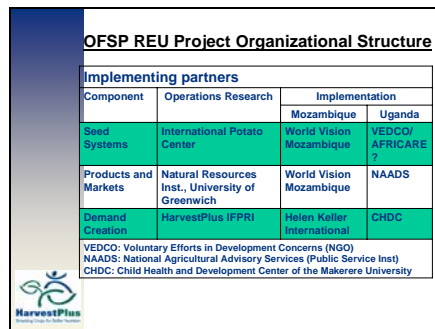


- Focuses on two contrasting production areas:
 - Mozambique: a minor crop
 - Uganda: a significant staple crop

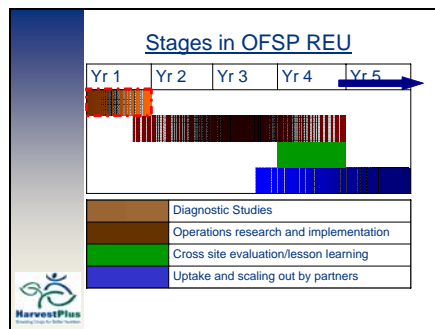
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Diagnostic studies:

- Understand vine availability and delivery systems
- Characterize consumer/producer preferences
- Identify bottlenecks in the system and actions needed to free constraints in system
- Identify the role of intermediaries in:
 - Acceptance of biofortified products
 - The production to market chain
- Select target communities/market chains for the implementation phase




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Diagnostics: Uganda

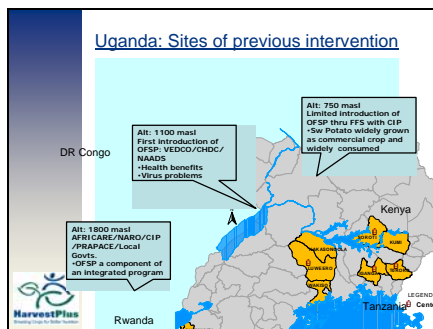
RRA: In preparation for full diagnostics

Findings:

- Farmers trained in rapid vine multiplication
 - They still use conventional strategies
- Vine conservation
 - Sprouting of roots
 - Use of swamps
 - Nursery beds near homesteads



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Diagnostics: Uganda

Challenges:

- There is high demand for vines among farmers
 - NGOs buy vines and disseminate free of charge
- Current OFSP vars less tolerant to pests and other agronomic constraints
- Drought a major constraint to vine availability
- Most promotion on food security not health
- Strong adult preference for high dry matter



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Diagnostics: Uganda

Opportunities:

- Good political support
 - The Prime Ministers' Office
 - Queen of Buganda
 - Ministry of Health focus on OFSP for vitamin A improvement
- Well qualified and knowledgeable partner groups
- New varieties with high dry matter in pipeline
- Increasing acceptability of OFSP in market
- Some farmers able to maintain vines




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OFSP materials planned for use in Uganda

Variety	Root Yield (t/ha)	Dry Matter Content	Vine yield	SPVD resist.	Altena	Flesh Color
SPK 004/1	36	34	30	3	2	Cr-Or
SPK 004/6	24	31	14	2	1	Orange
SPK 004/1/1	31	31	36	2	1	Yel-Or
SPK 004/6/6	21	32	17	2	1	Yel-Or
Kakamega (SPK 004)	20	37	29	3	2	Yel-Or

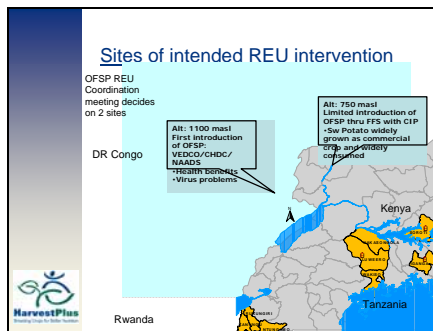
Materials harvested after 6 months



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Sample	Curtain level	Maximum peak wavelength (nm)	Concentration (mg fresh weight basis) (averaged*)	Concentration (mg dry weight basis) (averaged*)
Samia Sami	Very high	450-476	132.9±4.4	597.2±20.8
SPK004 Kalamang Nambunga	Low	426,448,474	35.1±1.2	181.1±3.6
Ejenda Sami	High	450-476	184.1±3.1	283.4±8.7
SPK0045 Sami	Medium high	450-476	82.5±6.4	338.3±1.6
SPK0047 Sami	Very low	426, 448	14.4±3.2	37.9±8.4
SPK004 Kalamang Nambunga	Low	424, 448, 472	37.4±3.3	99.1±8.6
Ejenda Nambunga	High	450-476	177.8±8.4	446.4±1.1
SPK0045 Nambunga	Medium high	450-476	78.9±4.8	219.2±11.2
SPK0041 Nambunga	Very low	402, 426, 448	13.8±8.7	37.3±2.1

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Diagnostics: Mozambique

Cost effectiveness of **TSNI** and the “**Eat Orange**” Models

TSNI: An in depth OFSP promotion project heavy on extension services: Focus on production, nutrition education and training


“**Eat Orange**”: a simplified version of TSNI; less intensive; uses community technology promoters

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Diagnostics: Mozambique

Findings:



- TSNI impact higher at intervention sites
- “Eat Orange” cheaper with similar impact to TSNI
- Affected target groups and influenced others in community to adopt interventions

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Diagnostics: Mozambique

Challenges:

- Main growing season for sweetpotato varies across districts
- Drought a major constraint to vine availability
- Sprouting of roots, still a major form of vine multiplication
- Root storage still a problem
- Drying used for food security, but have to use shade to avoid loss of b-carotene.

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Diagnostics: Mozambique

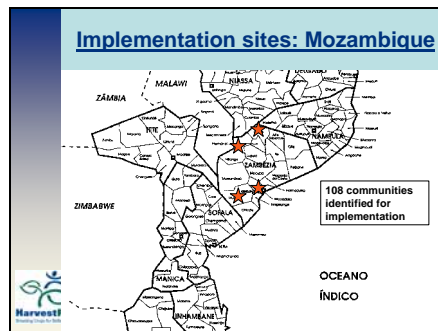
Opportunities:

- Some farmers engaged in rapid vine multiplication for cash income
- Important cross border trade (incl. sweetpotato) with Malawi
- Good collaboration from HKI (experienced in DC and BC)
- Improved community knowledge of Vitamin A increases adoption of OFSP
- Current REU intervention based on Eat Orange
- A new set of good OFSP materials meeting most grower and consumer requirements identified

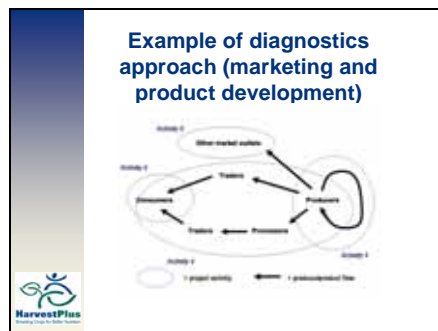
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OFSP materials planned for use in Mozambique							
Variety	Drought tolerance	Depth of Rooting	Vine yield	Vine vigor	Root taste	β -carot content	Suitable for use
DEAL	X	X	X	X	X	X	X
Released:							
Resisto	X	X	x	x	X	X	X
Jonathan	X	X	x	X	X	x	x
LO 323	X	X	x	X	X	x	x
Cordner	x	x	x	x	X	X	X
From 2003-2006 Trials:							
Gaba Gaba	X	x	x	X	X	X	X
199005.11	X	x	X	X	x	X	x
199062.1	X	x	X	X	X	x	x
199026.1	X	X	X	X	X	0	0
<div> <div>X = Good</div> <div>X = Acceptable</div> <div>0 = not acceptable</div> </div>							

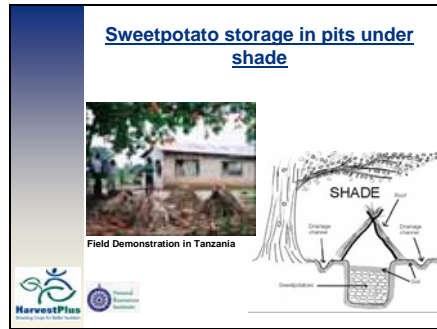
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Effect of storage on quality

- Do OFSP cultivars store as well as white fleshed ones?
- Effect of long term storage on
 - β -carotene retention?
 - Root acceptability to traders, processors and consumers?
 - Sensory characteristics
 - Processing criteria

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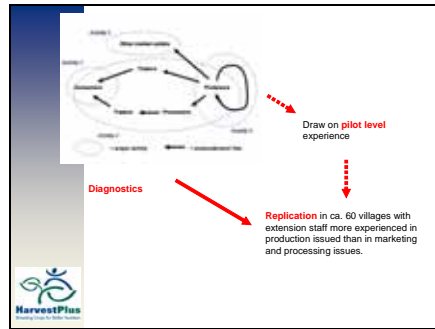
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Drying as a constraint

- Losses as high as 80+% on sun-drying
- Reduced in shade drying
- Understand mechanisms of β -carotene degradation and look for ways of overcoming.

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Engaging Stakeholders:

Awareness creation and support mobilization at the national and regional levels:

- Through alliances with lead advocacy institutions
- Workshops and conferences
- Direct contact with national research policy makers and administrators

An end goal - Institutionalization of biofortification in NARES and other stakeholder programs

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