



Maximizing Sweetpotato's Contribution to Poverty and Malnutrition Reduction: The Sweetpotato for Profit and Health Initiative



Development of the SPHI: 10 months in 2008/2009

Participatory investigation into the challenges faced and the way forward

Features

- **Phased process seeking input from stakeholders through field visits, multi-disciplinary theme papers, internet survey, and a series of five workshops**
- **Working paper published on 6 major themes**
 - **Breeding**
 - **Seed systems**
 - **Crop Management**
 - **Nutrition**
 - **Value Chains**
 - **Partnerships**



7 Major Constraints Identified and Prioritized & Way Forward Debated



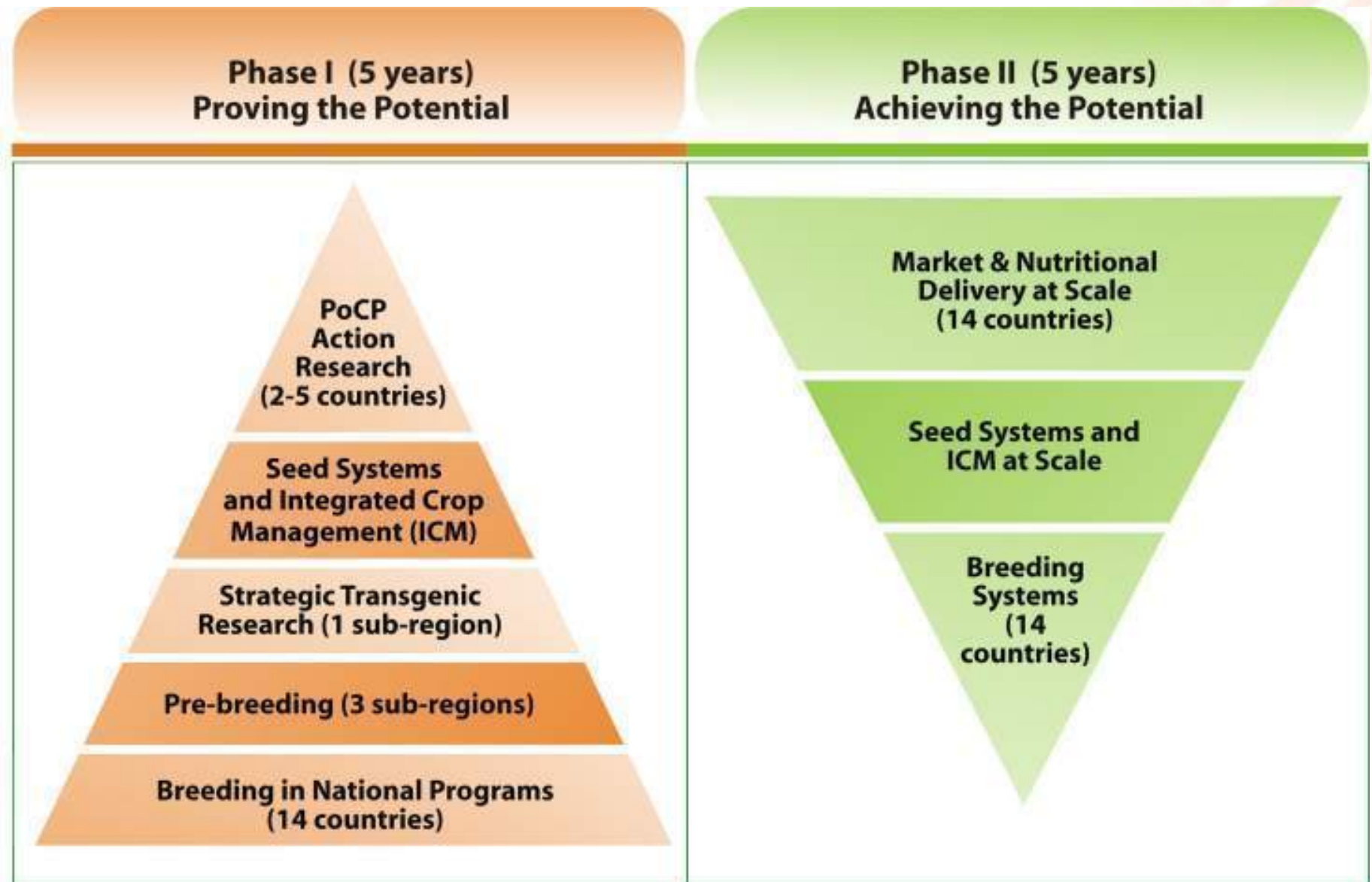
- **Lack of timely availability of adequate quantities of disease-free planting material**
- **Varieties with limited yield potential in specific agro-ecologies & quality characteristics that do not meet demands of specific target groups**
- **Damage due to the sweetpotato weevils in drier zones**
- **Limited demand and inadequate market**
- **Poor agronomic practices**
- **Limited awareness of decision makers about potential contribution of the crop to poverty and malnutrition reduction due to inadequate evidence base**
- **Need for a critical mass of informed stakeholders with good information exchange to maximize investment return**

Participants at the Challenge Workshop Reached Consensus on the Following *VISION* for a 10 year Initiative:

**Repositioning sweetpotatoes in
African food economies, particularly
in expanding urban markets, to
reduce child malnutrition and
improve smallholder incomes**



Two Phases: Greater Emphasis in first 5 years on Breeding and Seed Systems Research as the Foundation for Success







SPHI is a multi-partner, multi-donor initiative that seeks to reduce child nutrition and improve smallholder incomes in 10 million African families by 2020 through the effective production and expanded use of sweetpotato.

The Sweetpotato Action for Security and Health in Africa (SASHA) Project is a 5 year project led by the International Potato Center that will develop the essential capacities, products and methods to reposition sweetpotato in the food economies of Sub-Saharan Africa. It serves as the foundation for the broader Initiative.

Major Focus: Sweetpotato Support Platforms

to organize the work around research for development platforms that integrate and support the work of institutional partners in each sub-region



- **Provide technical backstopping**
 - Special emphasis on supporting AGRA supported Phd programs in breeding and AGRA support national breeding programs
 - Eastern & Central: Uganda, Tanzania, Rwanda, Kenya, Ethiopia
 - Southern : Mozambique, Malawi, Zambia
 - West: Nigeria, Ghana, Burkina Faso
 - More limited support for Madagascar, Angola, Burundi
- **Assure clean germplasm exchange**
- **Assure gender-sensitive design and implementation**
- **Assure comparable data collection** between countries engaged in the breeding and germplasm exchange
- **Facilitate information exchange**



Kumasi

Kampala

Nairobi

Mozambique

SPHI Central Base

Sweetpotato Support Platforms

Governance Structure: Key Elements

Critical Elements	Senior Management Team (SMT)	Executive Steering Committee (ESC)	Sweetpotato Support Platform (SSP)
Responsibilities	Assuring project objectives and milestones are achieved; Building SPHI, assuring donor and stakeholder buy-in	SSA-wide strategy and coordination; review of annual progress and proposed workplans; designs SPHI organizational structure in Phase II	Coordinating sub-regional breeding & germplasm exchange; Knowledge exchange; Advocacy; VITAA platform (OFSP promotion)
Who Chairs	SPHI Program Leader	Nominated and Approved by ESC members	SSP Coordinator: West Africa: Ted Carey

Roles of Key Members of the SSP

ROLE	DUTIES	REPRESENTATIVE
SSP Coordinator	Technical backstopping of regional breeding and germplasm exchange activities; Coordination of SSP meetings & activities	Ted Carey (CIP)
SSP Facilitator	Facilitates SSP Meetings; Advocates for broader Initiative at country and regional level	Esi Amoafu (Ministry of Health)
SSP Representative	Represents interests of West Africa on the Executive Steering Committee and attends SSP meetings; Support for building vibrant technical support capacity at CRI for the rest of West Africa	Director Hans Adu-Dapaah (CSIR-CRI)
Farmer Organization Representative	Bring perspective on smallholder farmer's needs to the group; review any extension materials developed; be advocate for sweetpotato among Farmer Organizations; carry information learned in SSP back to Farmer Organizations	Lydia Sasu (FONG)

Roles of Key Members of the SSP, cont.

ROLE	DUTIES	REPRESENTATIVE
Gender Specialist	Provide advise to current and future programs on how to ensure gender-aware design & incorporate gender into M&E systems	Lone Badstue (HKI)
M&E Specialist	Assist in assuring that key indicators are collected across projects and initiatives to help build an effective evidence base for sweetpotato; will collaborate with SASHA research informatics specialist; inform group about other relevant work in sub-region	Leonard Oruko (FARA)
Ghana Representative	Assist in coordinating implementation of SSP activities; advocacy for sweetpotato	John Asafu-Agyei (CSIR-CRI)
Nigeria Representative	Assist in coordinating implementation of SSP activities; advocacy for sweetpotato	Nnamdi Echendu (NRCRI, Nigeria)
NGO Representative	Learn about new technologies of potential use to NGOs and share NGO perspective on usefulness of new technologies; Promote integration of sweetpotato into other programs and at NGO forums	Ann Tarini-Hien (HKI-Burkina Faso)

Knowledge Forum for Sweetpotato in SSA



Technology: Content Management System

- Like the file system and office software, but more intelligent!
- You can create a folder structure (which is also a navigation menu structure)
- You can create Internet pages the same way you create a Word document
- You can upload Word, Excel, pdf, images, video etc
- Documents have metadatat/tags and can appear in multiple folders e.g institutional and scientific subject area

Define the top level knowledge structure of Sweetpotato in SSA



- Three groupings of knowledge
 - Knowledge on SP for journalists, donors and general public
 - Scientific knowledge fields
 - Organizations working on SP in SSA

Note: Scientific knowledge fields and organizations is a matrix structure, where organizations work in different fields. But in CMS not a problem as same document can appear in both e.g. the same CIP trial report can both be seen under CIP and under SP Trial.

1st step: Sweetpotato Knowledge Portal

- Define SP knowledge structure
 1. Popular introduction to SP
 2. **Germplasm**
 3. **Seed Systems**
 4. **Production**
 5. **Value adding (processing & marketing)**
 6. **Use / consumption**
 7. Institutions
 8. Projects/programs



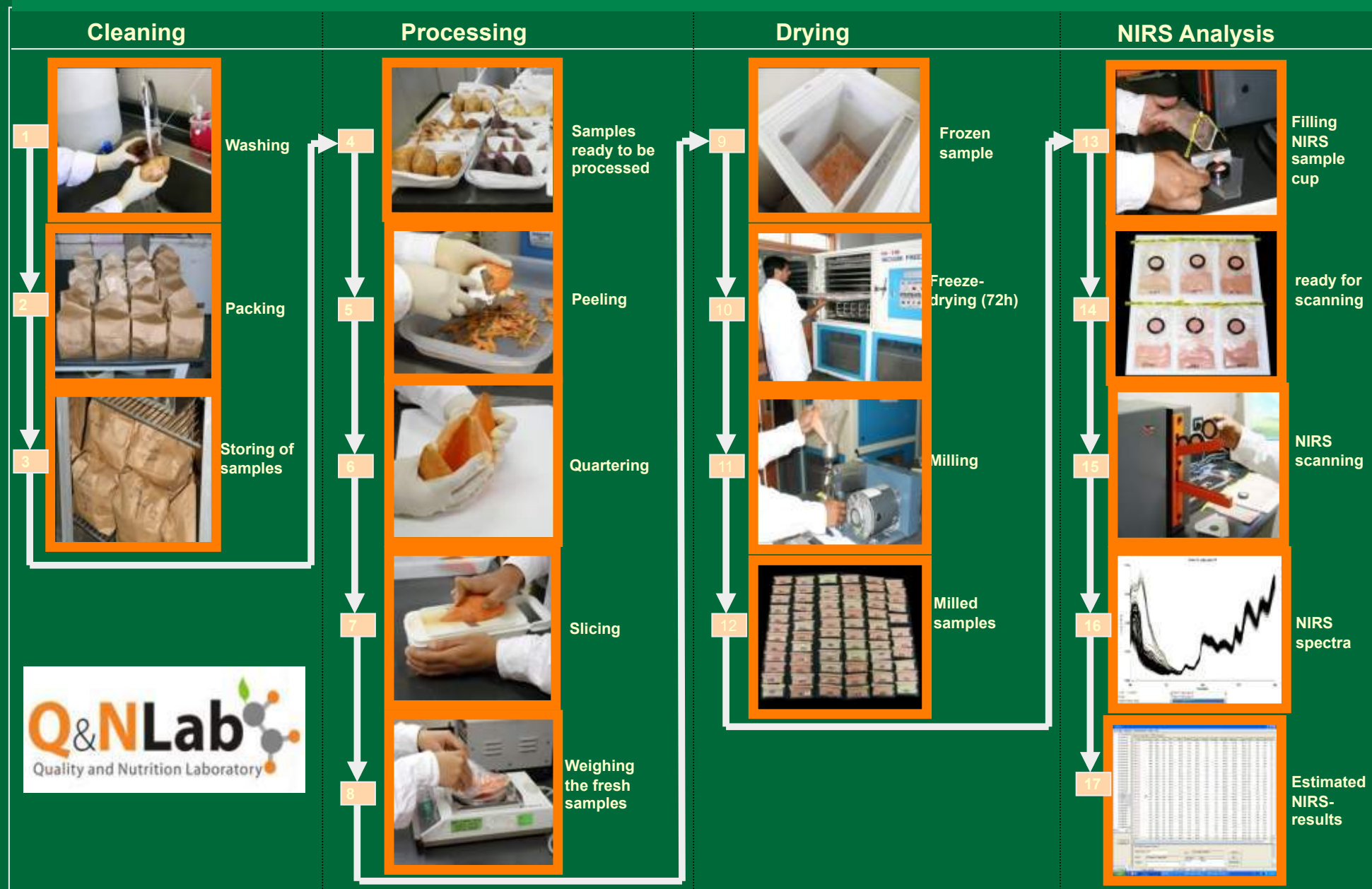
Major Focus: Breeding & Varietal Development

seeks to generate a radically expanded range of sweetpotato varieties that combine different quality characteristics with significant improvements in yielding ability



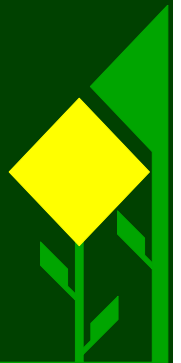
- **Generate populations to meet dominant needs of users**
 - All sites: High dry matter
 - East & Central Africa: virus-resistance, orange-fleshed dual purpose for animal feed
 - Southern Africa: drought resistance, orange-fleshed
 - West Africa: non-sweet sweetpotato, orange & white-fleshed
- **Redesign sweetpotato breeding systems in Africa to produce varieties in fewer years (3-4) than currently (7-8 years): “accelerated breeding”**
- **Additional new breeding methods tackled:**
 - heterosis into sweetpotato breeding
 - molecular markers for breeding for virus resistance

Workflow for sample preparation and Near Infrared Spectrometer (NIRS) analysis of sweetpotato samples at Quality and Nutrition Laboratory!



Advantages to use NIRS

- Do not use of chemical reagents => **No contamination!**
- Fast analysis of **several traits simultaneously** (less than 2 minutes per sample, several hundred samples per day)
- **Non-destructive** (intact seeds can be scanned)
- Easy sample preparation (Sweetpotato/Potato: drying + milling)
- In the application a cheap method, **2 US-\$** per sample



NIRS calibrations developed in sweetpotato freeze dried roots

- Total Protein
- Total Carotenoids
- β -carotene
- Fe
- Zn
- Ca
- Mg
- Starch
- Glucose
- Fructose
- Sucrose
- Maltose



Major Focus: Seed Systems Research

establish demand-led cost-effective seed systems for the dissemination of new varieties and high quality planting material



- **Develop and test strategies for the multiplication and dissemination of sweetpotato varieties**
 - enhanced farmer-based capacities to maintain quality planting material
 - cost-effective public sector distribution programs
 - potential for for-profit nurseries
- **Study the costs of disseminating sweetpotato vines using vouchers and trained farmer multipliers**
- **Assure sweetpotato varieties can be maintained in a disease-free state over time at the sub-regional level and that safe and efficient germplasm exchange occurs between countries**
 - develop field level diagnostic kits for virus detection

Major Focus: Proof-of-Concept Projects (PoCPs)

to understand the entry points in the value chain to improve market efficiency or diversify use especially for women, and design and test scalable approaches for improving food-based nutrition programs based on OFSP to combat vitamin A deficiency.

- **PoCPs evaluate options that influence the capacity to go-to-scale and achieve the outcomes on poverty and nutrition that are planned for the second phase**
 - Kenya Health PoCP: OFSP linked to health services for pregnant women
 - Rwanda Value Chain PoCP: Linking farmers to a large-scale private sector processor
- **Feasibility Studies:**
 - Animal Feed: Dairy cattle and pigs in Kenya and Rwanda
 - Market Study in Nigeria



Thanks for your attention!

