Sweetpotato Support Platform for West Africa: Regional Progress and updates from E. and S. Africa

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5th SSP-WA Meeting
26 June 2012, Accra, Ghana

SWEETPOTATO ACTION FOR SECURITY AND HEALTH IN AFRICA

- A brief background on SASHA and SPHI
- Sweetpotato Support Platform for West Africa
- Update from the Support Platforms for Eastern, Central and Southern Africa
  - Seed System Consultation
- Breeding and Seed updates from CSIR-CRI/SASHA

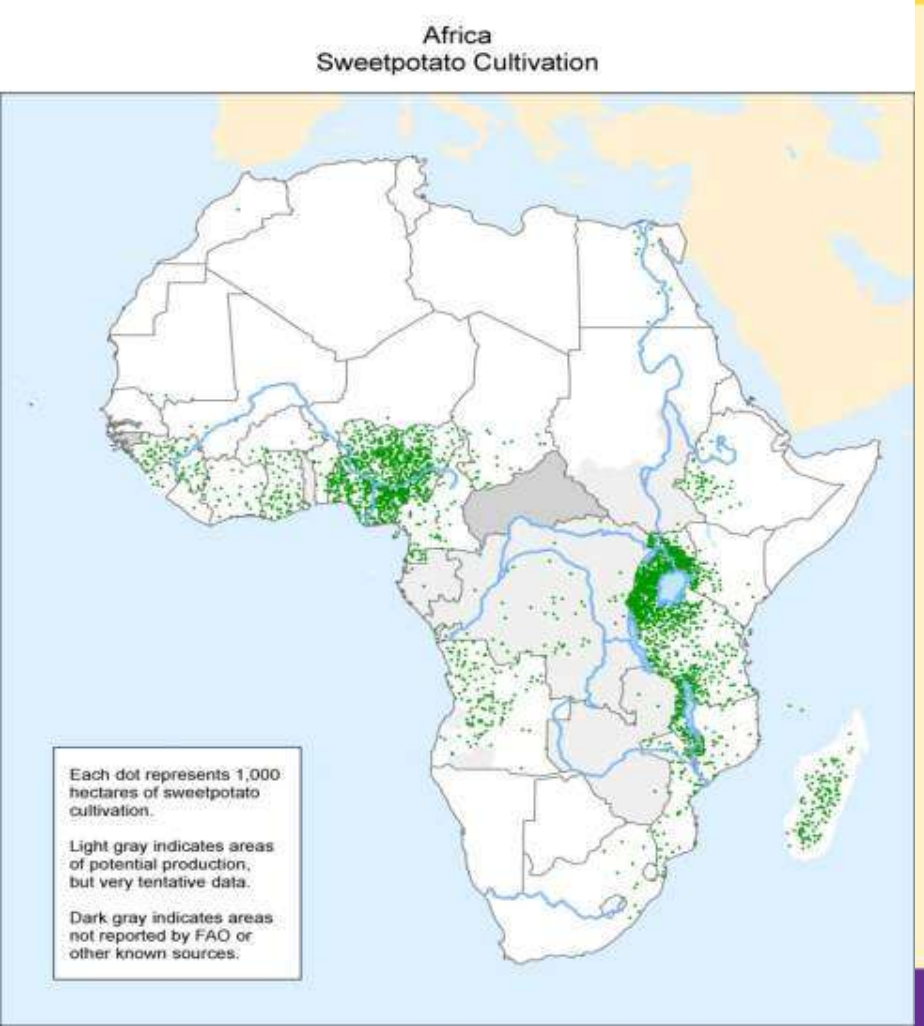
SPHI is a multi-partner, multi-donor initiative that seeks to reduce child undernutrition and improve smallholder incomes in 10 million African families by 2020 through the effective production and expanded use of sweetpotato.

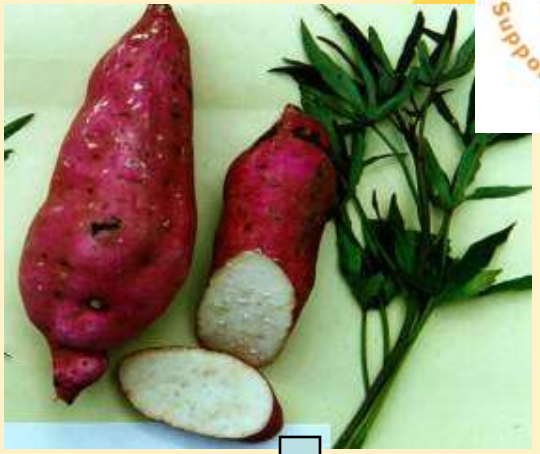
The Sweetpotato Action for Security and Health in Africa (SASHA) Project is a 5 year project led by the International Potato Center that will develop the essential capacities, products and methods to reposition sweetpotato in the food economies of Sub-Saharan Africa. It serves as the foundation for the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

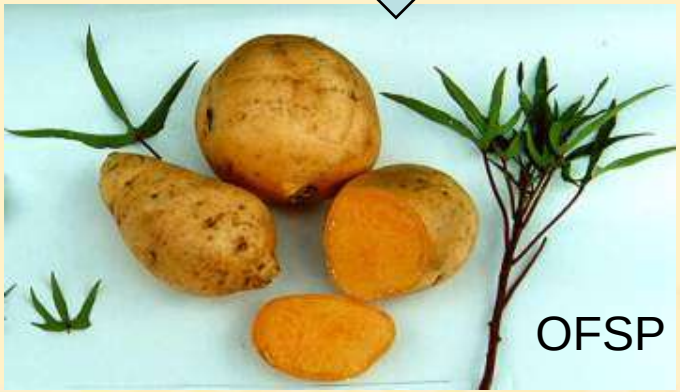
7 Major Constraints Identified and Prioritized during SASHA planning

- 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 markets
- Poor agronomic practices
- Limited awareness of decision makers about potential contribution of the crop to poverty and malnutrition reduction due to an inadequate evidence base
- Need for a critical mass of informed stakeholders with good information exchange to maximize investment return

The Potential Contribution of Orange-fleshed Sweetpotato







1. Marginal change ... VAD
2. Increased area, yields, marketing ... Food security

SPHI Sweetpotato for Profit and Health Initiative

17 priority countries, 3 sub-regions

- **Breeding + Platform**
- **RAC**

Some of the Programs of SPHI

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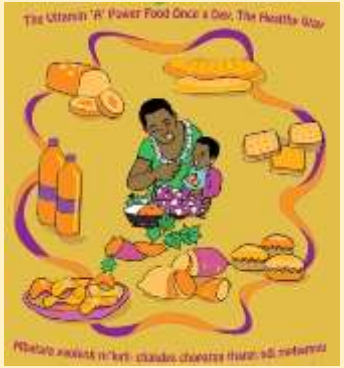
DONATA



MALAWI

ETHIOPIA

MOZAMBIQUE

ZAMBIA

UGANDA

Sweetpotato Support Platforms

- Built around breeding and seed
  - Populations for breeders
  - Varieties for farmers
  - Safe international movement of germplasm
- Provide a stakeholder forum
- Help build a strong Community of Practice

SSP-WA #2

Cape Coast, Ghana, October 2010

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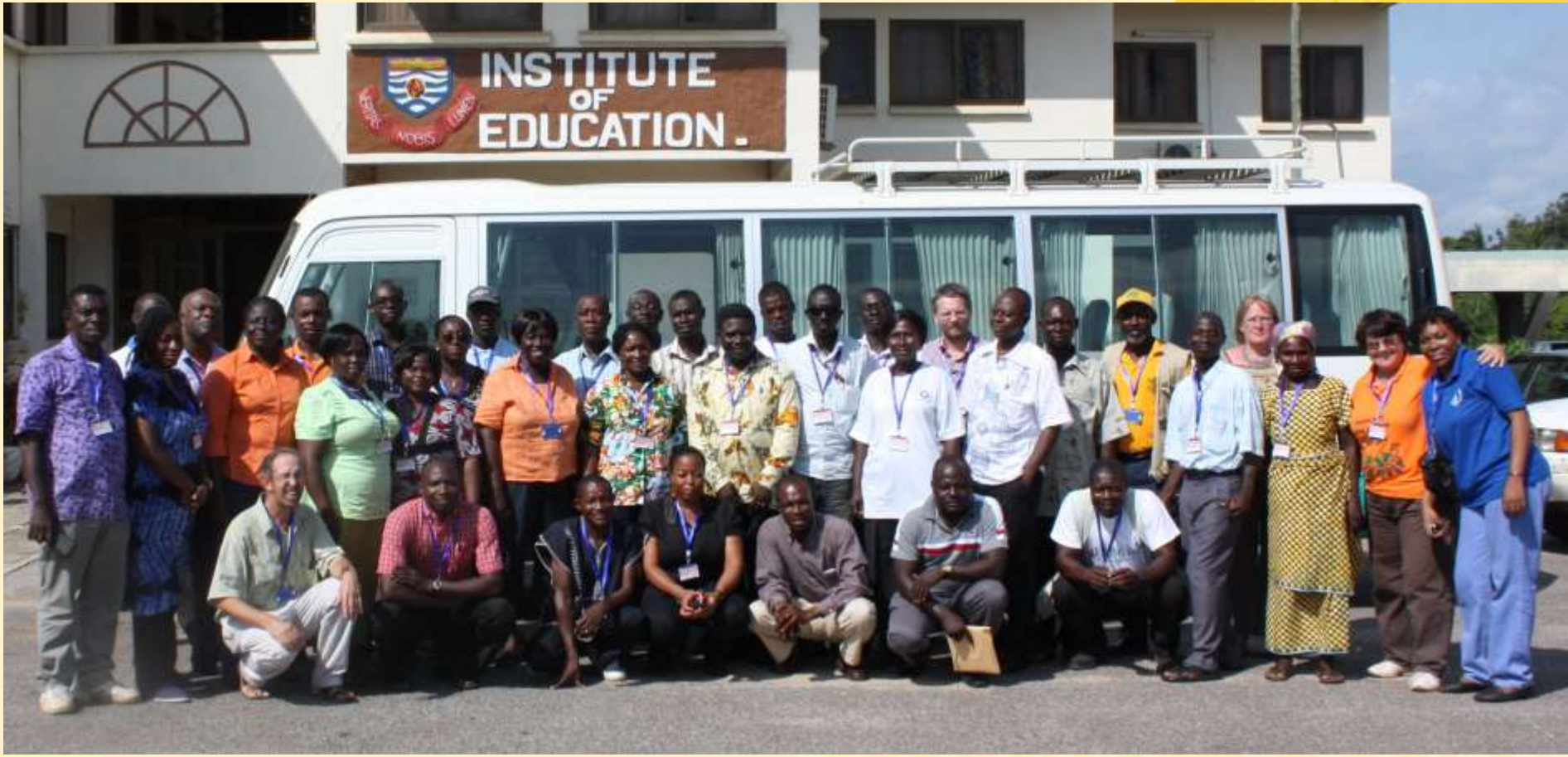

SSP-WA #3

Kumasi, Ghana, July 2011

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Meetings of the Sweetpotato Support Platform – West Africa

- July 2010, Kumasi, Ghana (Inception)
- November 2010, Cape Coast, Ghana (Value chain; Knowledge Portal training)
- July 2011, Kumasi, Ghana (RAC, Communication)
- January 2012, Abuja, Nigeria (Develop Nigeria SP proposal)
- June 2012, Accra, Ghana (Seed and Advocacy)
- September 2012, Abeokuta (proposed)

Sweetpotato Knowledge Portal

- http://sweetpotatoknowledge.org
- Anyone can join and add content
- All proceedings and presentations from past Support Platform meetings etc.

Recent Meeting of the SSP-ECSA Brought together a wide range of expertise, some with multiple roles

- 44 participants
- 14 countries
  - East & Central: Kenya, Uganda, Tanz, Ethiopia, Rwanda, Burundi
  - Southern: Mozambique, Malawi, Zambia
  - West Africa: Ghana, Nigeria
  - Other: Peru, Switzerland, England
- 23 researchers
- 10 project or program managers
- 13 agronomists involved in dissemination
- 7 vine multipliers or associated with farmer associations
- 3 virologists and 1 virology technician
- 3 agricultural economists and 1 data manager
- 4 breeders
- 1 regulator
- 1 gender specialist, 2 nutritionists

Why so much focus on "Seed Systems"?

- At Challenge workshop 3 years ago: Lack of timely access to quality planting material was identified as *the* #1 constraint to exploiting the full potential of sweetpotato (SP) in SSA

- The "Holy Grail"--- *sustainable* Seed Systems
  - Farmers always have ways to access material so they can sustain their yields & plant as much SP as desired
    - On their own farms
    - Sourcing from others

The Particular Challenge of SP

- Low multiplication rates compared to cereals
- Vines are perishable
- Easily shared among farmers
  - Low private sector interest
- Shortage common in areas with prolonged dry season
- Low knowledge among many farmers about viruses and how to engage in positive selection
- Limited clean-up and tissue culture capacity in many SSA countries

Main Themes of the Seed Consultation

- **“Getting the right seed to the right people – at the right time”: drawing principles from recent experiences (4 cases)**
- **Open market day**
- **Review and consolidation of knowledge on virus degeneration in sweetpotato**
- **Business models for private and public sector sustainable seed multiplication enterprises**

Case Study from Malawi

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- CIP
- DARS
- DAES
- Dept of Nutrition, HIV and AIDS
- MVP
- CU
- CADECOM
- WALA-CRS
- Kachele Club
- Farmers Union
- FICA-FAO

Breeding ↔ **Seed Systems**

Rooting out Hunger in Malawi with Nutritious Orange-Fleshed Sweetpotato

- Primary and DVMs
- Food based Nutritional Programs & The 'SUN 1000 Special Days' Movement
- Increased incomes through market development and diversified use

Farmers-Private Sectors-Consumers-Users

What approach was taken?

A 1-2-3 (primary, secondary, tertiary) Seed Systems

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Vine Flow

Primary

- Bvumbwe Research Station – 6 ha plus tissue culture, screen house, and breeding activities for new varieties
- Clean planting materials; managed by Researchers (DARS and CIP)

Secondary

- DVM based on Group Village Head, supervised by extension and NGOs; act as demos; clean vine producers
- Using a standard bed of 1 m × 20 m with rapid multiplication technique
- Access to irrigation scheme

Tertiary

- DVM based on Group Village Head, and trained by the trainers
- Using adjusted conventional multiplication and access to irrigation
- Producing vines and storage roots

To Producers

Primary Multiplication at Research Station managed by Researchers: i.e. presently at Bvumbwe Research Station

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- Assuring to produce clean planting materials with high yield
  - through breeding programmed by NARS with a strong CIP 's backstop

Currently Available:

- 6 ha: **Zondeni** (Expanding to North and Centre)
- 0.5 ha: **5 new OFSP**

- Rapid multiplication & irrigation with multiplication rates/yr: 1:30

In 2011 (Jan to Dec) this land provided 2,640,300 Zondeni vine cuttings (4400 bags of 50kg volume of each bag containing 8 kg)
Through March '12: 2,903,400 vine cuttings (4839 bags of 50kg) to various requests

What varieties were distributed? Zondeni:Jan 2010-up to date

Rapid multiplication for Zondeni was practiced at the Secondary Multiplication Sites

Chikwawa District

Salima District

Dedza District

Phalombe District

Zomba District

Adjusted Conventional Multiplication was practiced at Tertiary Decentralized Vine Multiplication (DVM) – Zondeni var

Mr. Menard Winesi (0.7 ha – Tertiary DVM + 0.2 upland – home consumption),Village: Bwanaisa, TA: Mkhumba , EPA: Waruma, Phalombe District (140312)

Method:

- Length of vine cutting: 30 cm
- Planting in ridge (5 m long)
- Planting distance:
  - Within plants: **15** cm
  - Between ridges: 75 cm

Tertiary Multiplication with flood & control irrigation

What varieties were distributed? Zondeni :Jan 2010 up to date

Newly released (Sep 2011): Anaakwanire, Chipika, Mathuthu, Kadyaubwerere and Kaphulira at primary multipication

CIP brought the Drip Irrigation technology to the Rooting out Hunger project areas

With Farmers Union of Malawi (FUM) in April 2012

During the Open Day organized by CU-Mulanje held in April 2012 - a demo on how to implement drip irrigation at the secondary multiplication covered by Zondeni variety

Farmers from Kachele Club in Salima District were happy when receiving the drip irrigation

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Salima district experiences frequent severe dry-spells, but the Zondeni OFSP does well. Irrigation is needed in this area!

An example: Mr. Oxford Dimo is a tertiary multiplier, from Chikhwawa.

He bought 2 additional diesel pumps for irrigation (in March 2011) from OFSP vine sales

What has been adoption/persistence of the varieties

Based on 1 variety, i.e. Zondeni, the adoption is high; this was due to implementing strategy that includes six integrated components:

- Strengthening the partnership with the relevant government, NGOs, and private sectors
- Seed systems
- Training, visits, and field days
- Demand creation campaign through behavior change communication (theatre, dance, poetry, songs, and banners)
- Voucher systems
- Postharvest and marketing on a small-scale.

Main Objective: Breed new populations with new methods and varietal development

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- Generate a radically expanded range of sweetpotato varieties that combine different quality traits with significant improvements in yielding ability
- Generate by population improvement new populations for major needs of users
  - SPVD resistance (East Africa)
  - Low sweetness (West Africa)
  - Drought tolerance (Southern Africa)
  - Incorporate important traits e.g.
    high beta-carotene content
    dual purpose for animal feed

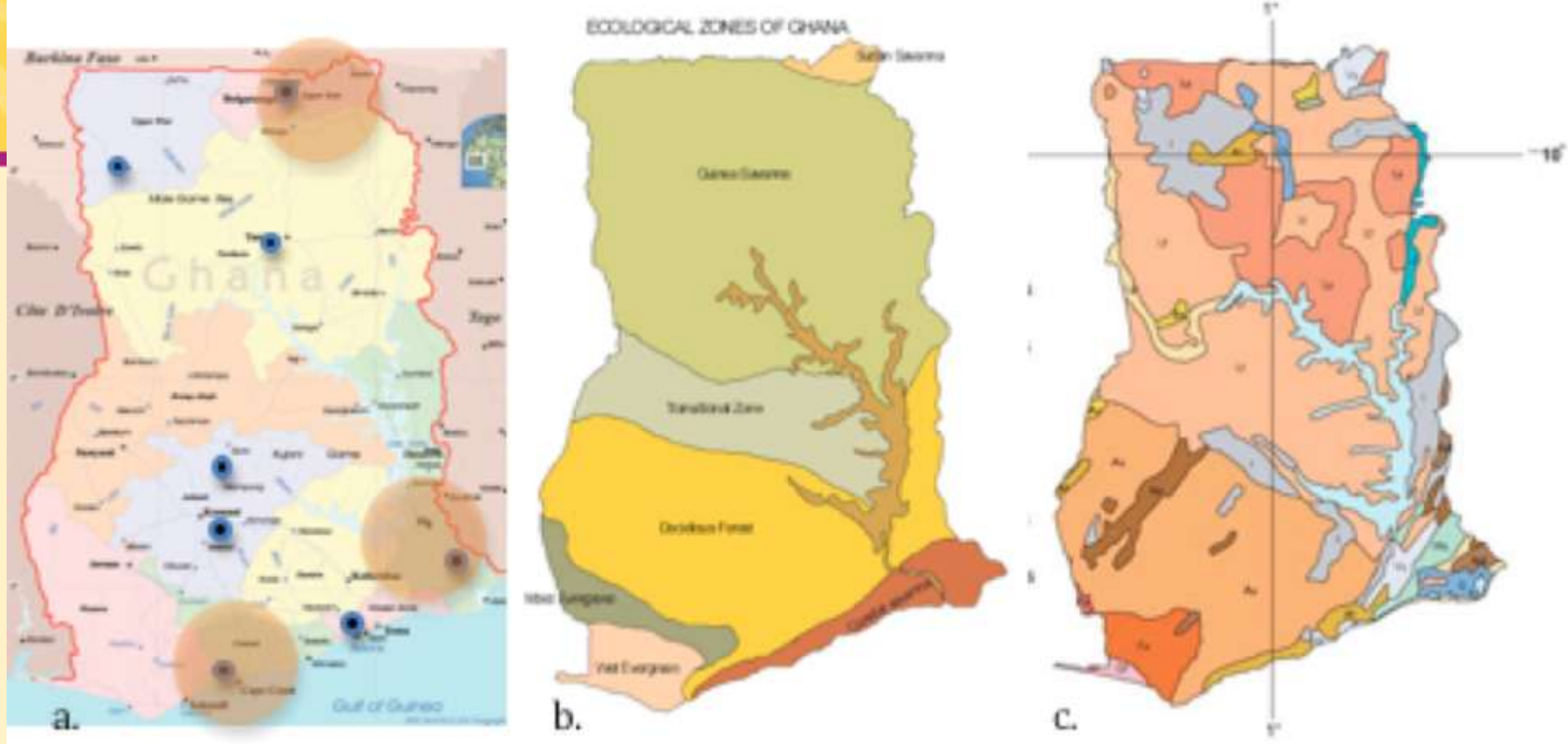

Figure 1. Map of Ghana showing a) sweetpotato production zones (large, light brown circles) and selection sites used by the breeding program (black dots), b) agroecological zones, and c) edaphic zones.

Selection sites are located where sweetpotato is important

BABA SALIFU, KOMENDA,
CENTRAL REGION

FARMERS
MANCHORO,
UPPER EAST REGION

NUTIFAFE WOMEN'S GROUP,
KPORKUVE, VOLTA REGION

Highlights from SASHA Breeding and Seed

- Still clarifying what consumers want and understanding science of quality
- OFSP materials coming through the breeding pipeline (including introductions from other breeding platforms)
- Healthy planting material for international distribution and local seed

Screen tunnels for clean seed

Looking forward to fruitful discussions of the way forward for sweetpotato in Ghana and in the region

THANK YOU