TOOLS4SEEDSYSTEMS:

SESSION 5: Activities in virtual countries and a look at Haiti’s seed systems assessment

SHARING EXPERIENCES AND LESSONS LEARNED FOR FUTURE

ONLINE EVENT – DEC 7TH 2023
Outline

• On-line survey for “virtual engagement” countries: Bangladesh, Ethiopia, Haiti, Madagascar, Mozambique
• World Humanitarian Day
• Haiti Sweet Potato Seed System Assessment
<table>
<thead>
<tr>
<th>Subject</th>
<th>Bangladesh</th>
<th>Haiti</th>
<th>Ethiopia</th>
<th>Madagascar</th>
<th>Mozambique</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of individual responses (organizations)</td>
<td>5 (1)</td>
<td>2 (2)</td>
<td>10 (10)</td>
<td>6 (3)</td>
<td>1 (1)</td>
</tr>
<tr>
<td>Type of disaster</td>
<td>Drought /flood</td>
<td>Drought /flood</td>
<td>Drought /flood</td>
<td>Drought /flood</td>
<td>Drought /flood</td>
</tr>
<tr>
<td></td>
<td>Plant disease</td>
<td>Plant disease</td>
<td>Political instability</td>
<td>Plant disease</td>
<td>Plant disease</td>
</tr>
<tr>
<td></td>
<td>Political instability</td>
<td>Political instability</td>
<td>Poverty</td>
<td>Poverty</td>
<td>Poverty</td>
</tr>
<tr>
<td></td>
<td>Poverty</td>
<td></td>
<td>Conflicts/war</td>
<td>Poverty</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Food insecurity</td>
<td></td>
<td>Human diseases (e.g., Ebola, COVID-19)</td>
<td></td>
<td>Conflict/war</td>
</tr>
<tr>
<td>Top target geographic areas</td>
<td>Rajshahi and Rangpur</td>
<td>Ouest</td>
<td>Gambelia</td>
<td>Tulear</td>
<td>Zambezia</td>
</tr>
<tr>
<td></td>
<td>Coastal and hilly areas</td>
<td>Sud</td>
<td>Oromia</td>
<td>Fianarantsoa</td>
<td>Sofala</td>
</tr>
<tr>
<td></td>
<td>Haor areas</td>
<td>Centre</td>
<td>Amhara</td>
<td>Toamasina</td>
<td>Nampula</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nippes</td>
<td>Southern Nations, Nationalities and</td>
<td>Vangaindrano</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Artibonite</td>
<td>Peoples' Tigray</td>
<td>Farafangana</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Vondrozo</td>
<td></td>
</tr>
<tr>
<td>Top staple preferences foods for target beneficiaries</td>
<td>Rice</td>
<td>Leguminous</td>
<td>RTB crops</td>
<td>Cereal</td>
<td>Maize</td>
</tr>
<tr>
<td></td>
<td>Potato</td>
<td>Cereals</td>
<td>Cereals</td>
<td>RTBs</td>
<td>Pigeon Pea</td>
</tr>
<tr>
<td></td>
<td>Fruits</td>
<td>Roots and tubers</td>
<td>Legume</td>
<td>Legumes</td>
<td>Cassava</td>
</tr>
<tr>
<td></td>
<td>Rangpur</td>
<td></td>
<td>Pulse</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kaharole</td>
<td></td>
<td>Teff</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dinajpur</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of beneficiaries</td>
<td>Bangladesh</td>
<td>Haiti</td>
<td>Ethiopia</td>
<td>Madagascar</td>
<td>Mozambique</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-----------------------------------------</td>
<td>------------------------------------</td>
<td>----------------------------------------</td>
<td>------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Vulnerable farmers</td>
<td>Vulnerable farmers</td>
<td>Vulnerable farmers</td>
<td>Vulnerable farmers</td>
<td>Vulnerable farmers</td>
</tr>
<tr>
<td></td>
<td>Refugees</td>
<td>Internally Displaced Migrants</td>
<td>Internally Displaced Population</td>
<td>Internally Displaced Population</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Internally Displaced Population</td>
<td>Refugees</td>
<td>Population</td>
<td>Population</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Local NGOs</td>
<td></td>
<td>Local NGOs</td>
<td>Local NGOs</td>
<td></td>
</tr>
<tr>
<td>List the RTB crops that</td>
<td>Cassava</td>
<td>Cassava</td>
<td>False Banana</td>
<td>Cassava</td>
<td>Cassava</td>
</tr>
<tr>
<td>your organization has</td>
<td>Banana</td>
<td>Banana</td>
<td>Potato</td>
<td>Sweetpotato</td>
<td>Sweetpotato</td>
</tr>
<tr>
<td>worked with</td>
<td>Potato</td>
<td>Yam</td>
<td>Desert banana</td>
<td>Banana and plantain</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>potato</td>
<td></td>
</tr>
<tr>
<td>How effective is the</td>
<td>Moderately effective</td>
<td>NA</td>
<td>Moderately effective for banana,</td>
<td>Not very effective for potato</td>
<td>NA</td>
</tr>
<tr>
<td>implementation of RTB crop</td>
<td></td>
<td></td>
<td>cassava, and yam</td>
<td>Completely effective for sweet potato</td>
<td></td>
</tr>
<tr>
<td>interventions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interested in support to</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>strengthen capacities for</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the design and implementation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of RTB interventions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Blogs describing CIP’s contributions in humanitarian interventions

• Uganda: Refugee, host communities find relief and stability in Orange-fleshed Sweetpotato - International Potato Center

• Reaching humanitarian and neglected places with the nutritious and resilient sweetpotato: The case of the Cyclone Idai in Manica and Sofala Provinces, Mozambique

• Madagascar: Anti-malnutrition initiative targeting drought-affected populations exceeds expectations in 18 months

• Relief group travels hundreds of kilometers to feed school children in Cameroon, braving roadblocks to grow orange-fleshed sweetpotato in conflict-affected areas

• Haiti: Improving the sweetpotato seed system in a challenging humanitarian environment - International Potato Center (cipotato.org)

• Discovering hope: Potato and sweetpotato technology transforming lives in drought and conflict-affected Ethiopia
Haiti Sweetpotato Seed System Assessment:
A Multi Stakeholders Approach

Bénédique PAUL, Justafort JULES, Leclerc FONROSE, Matino JOSEPH, Lovensky EUGENE, Jose AZEMAR, Jorge Andrade-Piedra, Gael H. PRESSOIR

CHIBAS, Université Quisqueya, Haiti

CIP, International Potato Center, Peru
Country facts

- Poorest country in the Latin America and the Caribbean (LAC) region and among the poorest countries in the world.

- According to the World Bank, nearly 90 per cent of Haitians live below the poverty line, with nearly a third of them living in extreme poverty (US$2.15/day).

- 22% of children are at risk of stunting.

Sources:

Level of Food Insecurity in Haiti (Integrated Food Security Phase Classification (IPC), 2023)

49% of the analyzed population is in IPC Phase 3 or above.

9.9M
Population analyzed

27%
Crisis

24%
Emergeny

31%
Stressed

18%
Catastrophe
Acute Food insecurity projection 2023

Source: https://www.ipcinfo.org/ipc-country-analysis/details-map/en/c/1156263/?iso3=HTI
Geography and Agriculture

- tropical climate (humid – semiarid)
- primarily mountainous (>2400 m asl) -> only 1/3 of land is suitable for cropping
- Main staple foods: **rice**, **maize**, wheat flour, **sorghum**, pulses, tubers (yams, cassava, **sweetpotato**), and plantains
- >60% of people depend on agriculture
- >1 Mio farms cultivating an average <1 ha

- **Constraints**: limited and low quality of inputs, pests and diseases, soil degradation, and unimproved cropping practices, postharvest losses
Haiti: extreme challenging humanitarian environment

The journey of research for development in Haiti is marked by critical challenges.

- Natural Disasters: >96% of the population is exposed to hurricanes, floods, droughts, earthquakes, and epidemics
- Gang violence, assassination of the president
- Crime, and kidnapping (3 kidnappings/day; 16,470 incidents of gender-based violence)
- at least 3,960 people have been killed, 1,432 injured and 2,951 kidnapped in gang-related violence this year alone)
- 62% of internally displaced people

Sweetpotato in Haiti

Cake, bread, chips and street food made of sweetpotato roots in Les Cayes, Haiti

Sweetpotato can be found in local markets and the roots are consumed boiled, fried and as bread. Their leaves are used as animal feed.

Food festival promoting sweetpotato products and dishes (Photos: Benedique Paul, 2022)
Strengthening sweetpotato breeding in Haiti

• This requires the availability of clean seeds including pest and disease control.

• CIP provided botanical seeds and technical backstopping that allowed for Quisqueya University to establish its own breeding program.

• CIP provides training on in vitro culture and clonal reproduction, controlled crosses, pest and diseases assessment, and other technical expertise needed for the success of the program.
Seed system assessment

MULTI-STAKEHOLDER FRAMEWORK FOR INTERVENING IN ROOT, TUBER AND BANANA SEED SYSTEMS

OVERVIEW

The multi-stakeholder framework gives researchers, policy makers, and practitioners a quick overview of root, tuber and banana seed systems. The framework is a table, with rows of stakeholders (such as seed producers, seed traders, and extensionists) and columns of seed system functions (availability of seed, access, and quality). It is best applied during workshops and field visits as a first step towards understanding a seed system, to plan a project. The framework can also be used to monitor or evaluate an intervention. The framework usually needs to be complemented with more in-depth studies using other tools.

Interviews

Stakeholders

National Researchers
Farmers organization
Private food sector
Traders
Seed producers
Specialized seed producers
Seed users
NGO (National extension)
Main results

- Ties between stakeholders are limited, with the closest relations existing between farmers who exchange seeds informally.
- The seed system operates under traditional settings, with varieties named, reproduced, and circulated based on farmers' institutional arrangements, lacking regulation from the public sector.
- Only one research structure and few specialized seed producers were identified in the regions surveyed.

Specialized production of sweetpotato planting material (vines) in Boucan-Carré, Haiti (Photo CHIBAS, May 2022).
Main results

• Seed producers plant sweetpotato one month before the main planting season (October to January) to harvest and sell vines to farmers, but most farmers obtain vines from their plots or from neighbours and relatives.

• The most cultivated varieties are: Ti savyen, Grenn mouton, Tifi pi dous, and Ouvè lekó.

• The names are mostly local (in Haitian creole) and gender related (reflecting stereotypes).

• In some locations, such as Arniquet, Chantal, Camp-Perrin and Mirebalais, between 9 and 13 different varieties were reported.

• From one location to another, the same variety can have different names. For example, Ti kawót is also named as Ti esken. In both cases, the names reflect the elongated shape of the sweetpotato roots.
Main results

- Weevils (*Cylas formicarius*) were identified as the main quality problem due to the damage they cause to the storage roots which makes them unsuitable for consumption.

- Other quality problems include viruses, which are ubiquitous in sweetpotatoes globally and controlled through healthy seed and resistance.

- The project will determine the exact viral species affecting sweetpotato in Haiti to enable their monitoring in seed systems and selection of resistance.

Sweetpotato root with severe weevil damage (Photo: CHIBAS, May 2022).
Next steps

Information from the seed system assessment is being used to design activities for:

• Recovering local varieties
• Identifying producers, areas and seasons for seed production
• Explaining seeds circulation between seasons and ecosystems
• Identifying biotic constraints to guide breeding activities
• Trait preferences for sweetpotato varieties

Training course in Lima: Sept-Oct 2023

Visit of inter-season plot of sweetpotato vines production in Limonade, Haiti (Photo CHIBAS, August 2023).
Acknowledgements

*The project is in collaboration with Quisqueya University, which is funded by The Agricultural and Agroforestry Technological Innovation Programme (PITAG) which receives support from IFAD, the Inter-American Development Bank and the Global Agriculture and Food Security Program. This is handled (and co-financed) through the MINISTÈRE DE L’AGRICULTURE, DES RESSOURCES NATURELLES ET DU DÉVELOPPEMENT RURAL (MARNDR).*
Thanks!