Sweet Potato Value Chain Research: Setting the Agenda for a Regional Program

Sixth Meeting of the Sweet Potato Support Platform for West Africa

Erata Hotel, Accra, Ghana

February 25-26, 2013

Contents

Executive Summary

The International Potato Center (CIP) and Sweetpotato Action for Security and Health in Africa (SASHA), hosted the "Sweet Potato Value Chain Research: Setting the Agenda for a Regional Program: Sixth Meeting of the Sweet potato Support Platform for West Africa." Over thirty-five stakeholders and representatives gathered for 1.5 days across February 25th and 26th 2013 to develop and promote the sweet potato (particularly the orange fleshed sweet potato). Various stakeholders from diverse backgrounds, particularly research scientists, private business owners, farmers, civil society agencies, the ministries, and others, attempted to share and learn from value chain research conducted in Burkina Faso, Ghana, and Nigeria.

On Day 1, participants learned about the value chain in Burkina Faso, Ghana, and Nigeria, as well as status updates on sweet potato activities. Value chain reports from Burkina Faso, Ghana and Nigeria indicate that reducing input costs of fertilizer, transportation and seeds would allow sweet potato farmers to increase their incomes.

It was also realized that there are multiple agendas among participating groups. Scientists in all countries are trying to meet several—and often conflicting--goals: increasing yields, increasing dry matter content, increasing beta-carotene content, increasing storage and sweet potato longevity, and so forth. Farmers, on the other hand, are interested increasing attributes that permit them from achieving the highest profit per hectare of land. Private businesses are interested in ways to promote sweet potato and to achieve its fullest potential in consumer markets. Nutritionists and International Development Specialists take unique interest in orange-flesh varieties to address Vitamin A deficiency.

On Day 2, several programs were briefly highlights such as seed projects, educational radio programs, dry lands systems, Reaching Agents of Change, and School Feeding. Following that, participants broke out into group discussions on the various priorities for sweet potatoes such as a cash crop, nutrition, livestock feed, and processed products.

Before the conclusion of the seminar, participants discussed whether they met their initial expectations from the program, of which a large majority were met. The seminar concluded with closing remarks from representatives of each country and interest group.

The overall conclusion from the 1.5 day program is that there has been progress in terms of research data, rising consumer interest, and product availability. However, research data must be synchronized and the results made more user-friendly. Also, as it stands, the private sector requires a more sell-able product that can compete with other profitable crops such as maize, rice, yam and cassava. Overall, the sweet potato needs to have a higher demand and value in order for the market to truly take shape and form.

Day 1: Value Chain Study and Status Reports: Nigeria, Ghana, Burkina Faso

Dai Peters - Burkina Faso: Findings from the Value Chain Study

- While Burkina Faso has a longer history of producing sweet potato as a cash crop than Ghana or Nigeria, there is an upward trend in sweet potato production.
    - Sweet potato is perishable forcing them to be sold quickly. There is also increased demand from and trade with Mali.
    - Main consumption of SP are not in the cities, but other provinces as a staple food and not a snack
    - Burkina Faso has a much higher yield than Ghana and Nigeria partially due to greater fertilizer usage and monocropping
- Among the three varieties of sweet potato sold in the market white sweet potatoes command the highest price but has a shorter growing season and is more susceptible to disease
- Burkina Faso introduced and began producing orange flesh sweet potato (OFSP) in the last 3-5 years and is not intercropped.
- Value Added Chain: Farmers produce to wholesalers, many of whom tend to be farmers. 80% is distributed to other provinces which cannot produce sweet potato. Surprisingly, larger cities do not have wholesalers.
- SP takes only 20% of cultivation areas because farmers have to allocate most of their land to food security crops. SP is the most important cash income, but most land is allocated to maize and other food security crops.
- Profits determined by costs, prices, and yields.
    - Yields highly related to variety and fertilizer application. Prices do not vary greatly across region, so mainly affected by yields. Therefore, planting earlier help farmers obtain higher prices.
    - Cost of production mainly concentrated in fertilizer, transportation and seeds (70% of cost). Reducing these costs may make SP production more efficient and generate greater profit
        i. Seed costs aren't so high because many farmers don't pay the full cost due to their own supply and substitutes from neighbors. Moreover, many of them stagger their planting.
        ii. Because sweet potato is a cash crop, farmers are more likely to invest in fertilizer. Fertilizer application is greatly related to yield and help farmers produce more.
        iii. Much of labor cost is covered by family and community exchange. Often a youth crop due to the heavy labor
- Wholesalers have a higher income from volume; the retailer, moderate; but the "Fryers" have very low income from SP.
- Recommendation: increase income with improved varieties, high yielding and early maturing/long season for higher prices. Better storage capabilities will also allow farmers greater revenue

Question and Answers

1. What is the literature in terms of production of SP compared to cereal per hector?

    - The cost of production depends on how people calculate it. Many families and communities use a community exchange of labor. If you include this value, labor will have a higher cost than household family costs.

2. The presentation referred only to weevils, what about other diseases such as Nematodes?

    - Although the presentation referred to weevils, it is actually inclusive of all pests.

3. What is your experience with intergrowing various varieties?

    - Sweet potatoes are not intercropped in Burkina Faso because it's too dry.

4. How do you separate white and orange SP because in practice they are grouped together?

    - These sweet potatoes are not mixed at the height of harvest season. By January and February there are very few white left. The orange flesh is generally set aside for its own price.

5. What livestock can be potential fed through sweet potatoes?

    - The vines can be fed to cattle, goats and pigs.

SOME Koussao - Burkina Faso: Status Report

- In the last 10 years there has been an increase from 27,000 tons to 141,000 tons, dominated by white fleshed and late maturing (4-6 months) varieties because of their good storage ability
- Major production constraints: weevil damage, susceptibility to poor soil, disease occurrences, lack of reliable market, planting materials, susceptibility to drought, storage ability.
- Importance ranked by farmers: yield, big storage root, good market appeal, resistant to insects, early maturing, cooking quality.
- The growing season in Burkina Faso is shortening each year, so farmers are preferring early maturing SP.
- Breeding objectives: to develop high yielding sweet potato with high beta-carotene content as a contribution to food security with the potential to alleviate malnutrition in Burkina Faso. There is a need to develop varieties with high nutritional values, adaptable, and ones that meet consumer demand.
- Major results: parental combinations to obtain better yield, high beta-carotene, good dry matter content known
- The current production is 10.8 tons/hectare on average, but they have evidence that some varieties have significantly higher yields (20.33) but with lower b-carotene and low dry matter. So the difficulty is meeting high yield, beta-carotene and good dry matter content

Question and Answers

1. Clarification between types and varieties of sweet potatoes.

    - Dai's presentation on the "varieties" of SP is more of types. Within the types, there are varieties. Varieties can be determined by skin and flesh color. But in practice, there are much more subgroups with different tastes, shapes, and so forth. Many farmers may not realize that there are multiple types of sweet potatoes subgroups.

2. Major problems are weevil and soil. How bad are the virus and disease problems?

    - Viruses are also a problem. Worse when you go to the farmer’s field. In laboratory settings, materials and tools are very clean and help prevent the spread of disease. Some farmers view diseases as a characteristic of the plant but now, they are learning that symptoms are related to the disease.

3. How did you get high yields?

    - Some varieties of SP produce higher yields but sacrifice other desirable qualities of a SP such as dry matter content or beta-carotene. In addition, research yields will be higher than farmers yield because of the growing conditions are the ideal conditions for researchers (horticulture, fertilizer,

pesticides) and researchers use the most advance techniques.

4. Do farmers consider the ease of peeling as a factor?

- Farmers consider peeling as a factor because the shape influences market desirability.

5. Why does skin color influences consumer choices why?

- Typically, local cultivators and historical precedence have set cultural attitudes towards the skin color of plants. People are used to seeing red skin potatoes, so they still expect them.

6. Does planting make a difference? Which month did you start planting?

- Sweet potatoes were planted in July and grew until October (4 months). Rain fall stops at end of September so there are three months of rain and 1 month for maturation.

7. What is the correlation between yield and dry matter, yield and b-carotene? How many months before harvest?

- There is no firm correlation among these factors. Most of the scientific literature does not report a negative relationship between dry-matter and yield.

8. Why did yield go from 62 tons to 32 tons per hectare?

- Poor rain fall one year. It is not related to the variety.

9. What is the breeding priority between cash characteristics versus nutritional characteristics?

- Typically men prefer cash characteristics. But one problem is establishing correlation versus causality. Perhaps farmers are not concerned for some characteristics because they exist within local varieties. For instance, they report that they are interested in higher yields and not interested in taste because all current sweet potatoes already have high flavor but still have low yields.

Ekpor Ackah - Ghana: Findings from the Value Chain Study – Southern Data

- Production of sweet potato is increasing with Accra as the hub of consumption
- Production in Akatsi is the highest in the South because 1. monocrop and specialist producers; 2. Access to large market (Accra, exports); 3. local home consumption
    - Akatsi growing season is nearly all year permitting them to produce in the rain and dry season. They're also close to the Volta River for irrigation.
    - Shelf life. It takes up to 1 week to move from Akatsi to Accra but typically is much faster.
- Major market characteristics include sweetness, dry matter content, and color intensity. Sometimes processors will add colorants to attract consumers.
- Processors prefer small sized SP in contrast to home consumers.
- Characteristics of farmers: specialist, transition, and home-consumer growers. Specialists grow sweet potatoes for the purpose of money. Transition farmers may or may not grow- they're in between. In Southern Ghana, the majority are home-consumer growers.
- Major production cost has to do with the practice of ridging. Ghana has a fertilizer subsidy system so there is a uniform price throughout the country. However, many farmers do not use fertilizer except specialists.
- Many farmers practice ratooning for their seed system
- Kasao generates the largest profit while Techiman produces decent profits with low productions
- Typically, retailers make the most profits, more than wholesalers.
- Consumer segments: school children, lunch meals, home-cooked meals for households.
    - Many consumers treat sweet potatoes as a substitute of yams. Professional workers need to go out and get food.
    - Dry matter content is preferred because it is more solid and uses less oil for cooking. There is a potential market for yogurt products.

Question and Answers

1. How did you judge the potential market value?

- Potential market value is better thought of as extrapolated market value. After determining the sample size (actual market size), the market value size was extrapolated.

2. Akatsi is producing three crops a year, are they using irrigation?

- They are close enough to the Volta River to use it for irrigation. But the answer is not definitive, they may be using irrigation or rain water.

3. The use of artificial colors, what types of colors do they use? What are the effects on the potato and the consumers' health, particularly with regards to children?

- In order to sell, agro-processors state it is easier to get a desirable color than high dry matter content so they produce sweet potatoes with high dry matter and then change its color. There is no comment to the health effects of colorants.

4. Many consumers don't like sweet potato because it's sweet. How can we promote sweet potato then?

- Despite its name, there are many different types of sweet potatoes, including not so sweet ones. There are sweet potatoes for cash crop, for feed, for homes. It depends on the variety.

5. Types of production systems you came across

- The study did not focus on production system. In the other regions are multicropped.

6. Why are there such a large discrepancy between the Ghana and Burkina Faso yields?

- This has a lot to deal with intercropping and monocropping. In Burkina Faso there is greater usage of monocropping and fertilizer. However, the north east of Ghana does not use fertilizer while in the south it is intercropped, reducing its yield potential.

7. What are Ghanaian preference between orange and white fleshed?

- The color of orange flesh SP is much more desirable than white fleshed. However, first is DMC, then taste, and then color.

8. Where can Ghanaians increase value on the value added chain?

- The areas of interventions are similar to Burkina Faso: cost, price, and yield.

John Bidzakin- Ghana: Findings from the Value Chain Study- Southern Data

- The upper east has higher production than upper west because of use of fertilizer. Upper East ranks SP as the first cash crop. Northern region does not apply much fertilizer compared to the south.
- Planting period is June-July.
- Varieties based on flesh color and skin color.
- Seed production mainly from ratooning.
- Sweet potato production is mostly monocropped in the north while it is intercropped in the south.
- There are beliefs that orange fleshed sweet potato causes malaria or impotence resulting in lower production and consumption.

Question and Answers

1. Bawku is an important sweet production area but there's very few sweet potato consumption at the market. Why?

- It is possible a reflection of production volumes, but distribution. Much of it is sent to Burkina Faso. The researchers intend to revisit Bawku because of data issues.

3. What is the weight of a bag?

- 100kg = bag. Weight changes depending on time of the year due to water content. However, there is no uniform standardization of a bag of sweet potato across countries, let alone within Ghana.

4. Can we harmonize data if it is Volta region or upper east?

- There is no standardization among countries, so we can't compare between Ghana, Burkina, Nigeria. Some comment that if Southern and Northern Ghana are not harmonized, then it's a bit of a waste of data. Although a standardized questionnaire was used in all three countries, the methodology of analysis needs to be re-examined.
- It should be noted that there will be viabilities for the same variety because of there are so many other factors: soil quality, endemic varieties

5. What is sweet potatoes being used for? Export? What about Aktasi specifically?

- Akatsi is being used for in three consumer segments: school children, processors, and homes. Home consumers use it in complicated dishes.

Ted Carey - A Status Report Ghana: Ghana Sweet potato Improvement Update

- Although Sweet potato is not currently popular, trends are changing and have had a good track record of interest by various institutions.
- Sweetness is thought to constrain demand for sweet potato
- In the north, skin variety is less important.
- Breeding process of new varieties require crossing, seeding, cloning
- Children prefer orange sweet potato because they say it's sweet
- Various varieties of sweet potato have different attributes with some with higher yields and some with different tastes.
- Mistaken negative perceptions (SP causes diabetes, malaria, etc.) of sweet potato continues to persist

Dai Peters - Nigeria: Findings from the Value Chain Study

- There is a discrepancy between government data on production and supply. Government statistics could be skewed based on many farmers are producing for home consumption versus the market.
- Lagos is country's largest market. Wholesalers state they have the demand to sell up 50 trailers a day versus 20, implying that there is excess demand for sweet potatoes.
- Specialized sweet potato producers are fairly new, mostly within in the past 4-5 years. Specialized in SP production produce one variety while intercropped grow many varieties.
- Much more people buy seeds from specialized producers because there are more stable prices. But many still intercrop.
- Weeding is expensive because it's done 2 or 3 times per year
- Production in Benue is strictly for home consumption but they apply a lot of fertilizer.
- Production in Abuja sells to the national market, so their prices are the same as the national prices. Local markets have more fluctuation.
- When they produce one area, they're producing the market demand varieties. The market typically does not demand local varieties
- Farmers produce different varieties depending on desirable characteristics. For instance, shelf life is important for national markets.
- There are different types of farmers, so not all interventions are appropriate. Some farmers produce for fresh root, as cash crop, for livestock feed, or as nutrition product.

Solomon Afuape - Nigeria Status Report

- The study indicates that there is a strong correlation with dry matter content and flour/starch content
- Breeding sites are located in two locations: Rain Forest Belt and Savannah
- Last year released 7 new varieties across 7 states in Nigeria to find the best four.
- Two new released - 1 white and 1 orange flesh
- Working on sweet potato ethanol, chips with an emphasis on process and product optimization.
- Need greater capacity. All sweet potatoes are still susceptible to virus.

Questions and Answers

1. Given the fact of intercropping, how do you estimate your yields? Taking into account of other crops.

- The study evaluates on a monocropping system. When estimating yields in an intercrop system on a farm, it's not known what the effect on yields is.

2. What potential might there be for orange flesh sweet potato in local markets?

- There is a possibility, but not definitive.

3. Was 23 tons/hectare estimates under normal or ideal conditions?

- At a research institute where they apply fertilizer and have modern irrigation, it is under ideal conditions.

4. For new sweet potato products, how far along are they? Have they looked at the economic and technical aspect for these?

- These areas have not been investigated.

Susan Torson - An Overview of the Ghana School Feeding Programme

- Governments have identified school feeding programs to produce optimal growth because it makes school more attractive to parents and provide extra nutritional and health benefits to children.
- The government has identified on three key areas for Ghanaian prosperity: agriculture, health, nutrition
- Mission: hopes to provide one adequate meal for students each day. These meals are cooked from locally produced food stuffs to poor school children in order to strengthen agricultural production in the poorest communities and enhance the capacity of school communities
- Objectives: Short term objectives versus long term
    - Short Term 3 main:
        i. Reduce hunger and malnutrition
        ii. Increase school enrollment attendance & Retention
        iii. Boost domestic food production
    - Long term
        i. Poverty reduction and food security
- Decentralized form of implementation
- Community participation
    - The strategy is to feed children with locally prepared food
    - Intended to break the cycle of long time rural poverty
    - Committees are made up PTA, boy and girl prefect, and other members of the school administration to decide on the caterers
    - The caterers qualifications are anybody who can do mass cooking under hygienic conditions. First look at local producers, then district, then national
- There are still challenges with linking the food program with agriculture.
    - There continues to be a weak linkage with agriculture. They are expected to get 80% of food by locality. There's a new buffer stock system, and there is still weak linkage.

Lutuf Abdul-Rahman – PCD HGSF interventions in Ghana

- Supporting the government for home grown school feeding. They don't want it to be a policy where people scrap it.
- Caterers are independent and should be seen as contractors.
- Aims to change families' consumption patterns towards more nutritious foods.
- There continues to be poor linkage between caterers and local farmers.

Questions and Answers

1. It has been reported that school feeding program are changing feeding system to three meals. If major changes are occurring, what are they? Have you considered the increase in meal volume instead?

- There's been an expansion of feeding programs the secondary school

program.

2. Adding sweet potato to nutrition programs may legitimize it as a food source. How do we legitimize the addition of OFSP?

- This would take several stages
    - Age of research: Beginning with a pilot to show SP advantage. The demographic health survey can give insight on areas that are well targeted.
    - After the research pilot, intervention, control group, then increase the scale.
- Introducing SP to school would require it to be cheap and fall within the budget.
- Many school feeding programs still have not been able to meet 1/3 of daily caloric needs, in other places they were stable. This is a persistent challenge.

Day 1 Review and Realizations

- Intervention focused on production rather than consumer markets
- SP has grown from minor crop to a cash crop
- 3 commonalities of interventions: increased fertilizer, cheaper seeds, cheaper transportation
- There is a disconnect between research scientists & the market
    - OFSP is pushed by scientists because of nutrition but still not popular amongst consumers. It has to compete with other sources of foods that many consumers prefer
- Burkina Faso has production concentrated on the white flesh
- Practical utilization knowledge (e.g. cooking recipes) is lacking. Many people use sweet potatoes as a substitute for yams and thus cook it in a similar way. As a result, many prefer sweet potato to have similar qualities as yams, such as high dry matter content.
    - Preference for higher dry matter content is to the point where SP are being colored.
- There needs to be a greater examination of the shelf-life of the crops across countries.
- It's hypothesized that when the OFSP is fit into school feeding, it will build demand and encourage farm production. When the OFSP is fit into school feeding, it will build demand and encourage farmers
- Variations in yield, although some variability is expected
- Farmers are concerned that the research results under ideal laboratory conditions are not applicable to them because of different environmental circumstances and thus, will not result in higher yields if they adopt a different variety.
- There needs to be a closer examination of fertilizer and breeds, not just

crop variety.

- There continues to also be disconnect between producers and processors.
- SP is an emerging crop and begun at the small scale. Therefore, it's reasonable to believe that it will take time before there is greater market demand.
- There's dual objective of achieving commercial viability and high nutrition. Typically, one sacrifices the other.
- Research findings must consider audience and make sure that the information provided is relevant to them
    - Research should use more private participation
- SP is an emerging crop and market growth takes time - for example Cassava. In another case, IndoMie has been successfully marketed to Ghana.
- Average consumers do not know of nutritional value of OFSP and demand would increase if they knew it

Day 2: Pipeline Studies and Group Discussion

Yesterday's Takeaway

- There are various agendas trying to be served (Farmers, private, research scientists), each with different priorities.
    - Farmers are trying to maximize profits
    - Private companies are trying to maximize consumer demand
    - Research scientists are trying to keep SP nutritious while keeping the other two considerations in account.
- Farmers believe that there is a gap between research results and application for them because studies are conducted in ideal conditions.
- Projections on profitability based on research yield will lead to skewed results because production was based on ideal conditions
- Looking at various varieties SP to be used in different ways.
- Need to introduce better technology and techniques to farmers to improve yields
- Are Ghanaians better off intercropping or monocropping?
- Economic factors continue to plague monocropping and intercropping i.e. risk versus reward, food security, market demand
- There continues to be a lack of storage ability of sweet potato
- Change in farmers attitudes are really necessary

Seed Projects – Panel Discussion

- Burkina Faso: Continued seed modification, it takes about three months. Continued research on how to clean the SP, background of diseases and so forth.
- Nigeria: Seed modification and multiplication system uses tiers: multiplication of breeders' seed, extension organizations located in every state.
- Ghana. Two location for growing new plants. There's a primary location and then a shift to where they supply irrigation.
- There needs to be a strengthening of seed programs and a greater variety of programs.

Farm Radio International - Radio Orange Fleshed Sweet potato

- A Canadian based NGO seeking to mainly to reduce vitamin A deficiency in children. They train broadcasters, give them resource materials, create impact programming, and broadcast through ICT and radio.
- Provided people with radios and mobile phones to receive agriculture information including market rates.
- They involve farmers in the program and broadcasting design.
- First phase focuses on production, second phase on consumption.

Needs assessment of sweet potato production in northern Ghana: (Dryland Systems)

- Aim is to create sustainable agriculture in dry lands.
- IN Ghana two sites were identified sustainable agriculture development is achieved through multidisciplinary approaches, developing system approach, and site specific SRF.

Reaching Agents of Change

- Objective: creating enough awareness of sweet potato during its project period so people will invest in sweet potato. Provides a technical course on sweet potato and trains trainers.
- Overwhelmingly focused on OFSP.

Group Discussion

Each group was concerned with five areas breeding, seeds, production management, post-harvest and marketing.

Nutrition/Orange Fleshed Sweet potato

- Breeding
    - Short Term: Purple flesh sweet potato for health
    - Medium Term: High dry matte OFSP, high yield OFSP, high beta carotene, breeding for leaves, breeding for varieties that lower perishability
- Seed System
    - Short Term: Multiple and sell seed of OFSP varieties, dry season maintenance (fencing, water access), availability of market for seeds
- Production Management
    - Short Term: Fertilizer, decrease ridging labor, introduction of best ICM practices
- Postharvest
    - Short Term: new harvest methods, experimental fresh root storage methods, trials to prolong shelf life, new recipes appropriate within local food consumption practices
- Marketing
    - Short Term: Awareness campaign of health benefits, facilitation with multinational value chain, Awareness

Cash Income Focused

- All aspects are a high priority within the breeding, seed system, production management, postharvest, and marketing

Animal Feed

- There's a high priority for dry matter content, starch, and the protein to star ratio in the short term
- There's high interest in building a supply chain for selected varieties
- There should be fertilizer trials to determine the most appropriate practices to obtain the highest volume of vine & root biomass and livestock nutrition
- Support experiments with various vine silage treatments

Processing Products

- High priority products
    - Crisps (short term), flour(short term), industrial starch (long term), Juice(medium term)
- Uniform root shape and size (Long term), high dry matter per hectare (Short), Starch properties(Medium) , low sugar (Short)
    - For juice: high sugar (Short), high moisture (Short), attractive color

(Short), high soluble fiber (Short)

- Seed system (high priority)
  - suited for large scale production (Short)
  - Linked to Rainbow Project in Nigeria and other projects in Ghana and Burkina Faso (Short)
  - Linked to Private Sector [farmers, etc.] (Short)
- Postharvest issues, high priority
  - Continuity of supply of fresh roots (Short/Medium Term)
  - Post-harvest management of roots - handling and transportation (Short/Medium Term)
- Research stages for product development, high priority
  - lab scale research
  - pilot scale
  - private sector
- For juice, develop marketing & promotion strategies, technology to improve shelf life beyond 24 hours

Closing Remarks

- An appeal from Nigeria for providing support to promote SP
- Provide a more comprehensive perspective, especially more participation with the private sector
- Highlight breeding issues and country reports
- Outstanding issues should be to build upon this meeting in the future

Appendix I: Revised Time Schedule

Sweet potato Value Chain Research: Setting the Agenda for a Regional Program
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Time	Topic	Presenter
Value Chain Study and Status Reports: Nigeria, Ghana, Burkina Faso. Chair, Jennifer Pierre Satti		
8:30	Registration	
9:15	Welcome and Introductions • Formal Welcome and Introductions (5 mins) presented by Ted Carey "Appreciating our Current Context & Moving Forward" • Introducing Each Other – *(55 mins) "Ice Breaker, Introduce yourself"* veggie and fruit intro • Overview of Program Agenda (5 mins) – *Review the 1.5 day agenda* • Reviewing our Norms (5 mins) – *Participants should be allowed to give input and facilitators to note points on flipchart paper.*	Ted Carey
10:25	Burkina Faso: Findings from the Value Chain Study • Questions of clarification • Facilitator-led session "appreciating the major points" the facilitator will lead a plenary session on what was intriguing/interesting, and what was questionable/skeptical	Dai Peters
11:30	Tea Break - Sweetpotato Snacks	
11:50	Burkina Faso: Status report	Solomon Afuape
12:30	Ghana: Findings from the Value Chain Study • Questions of clarification	John Bidzakin/Ekpor Ackah

	• Facilitator-led session "appreciating the major points" the facilitator will lead a plenary session on what was intriguing/interesting, and what was questionable/skeptical	
13:30	Ghana: Status report	Ted Carey
14:00	Lunch	
14:55	Nigeria: Findings from the Value Chain Study • Questions of clarification • Facilitator-led session "appreciating the major points" the facilitator will lead a plenary session on what was intriguing/interesting, and what was questionable/skeptical	Dai Peters
15:20	Nigeria: Status report	SOME Koussao
Projects in the pipeline – Linkage to Value Chain Understanding. Chair, Jennifer Pierre Satti		
15:40	School Feeding Programs/Projects	Susan Torson + Gertrude Ananse
16:30	Review of Day	Jennifer Pierre Satti
	End of session	
Projects in the pipeline – Linkage to Value Chain Understanding. Chair, Jennifer Pierre Satti		
9:30	Seed Projects – Panel Discussion	By country
10:03	Radio OFSP project	Ben Fiafor
10:12	Dryland Systems	John Bidzakin
10:20	Reaching Agents of Change	Ted Carey

Brainstorming the Way Forward. Chair, Jennifer Pierre Satti		
10:30	Presentation of group tasks	Chris Wheatley
10:45	Break	
11:00	Groups discuss needs for breeding, seed, production, postharvest and marketing by product: Cash, Nutrition, Animal Feed, Transformation, and Processed Products "develop a matrix"	Four breakout sessions
12:00	Plenary presentation, discussion, and ranking of products	Reporters from groups and facilitated discussion
12:45	Closing remarks	By country and by stakeholder
13:20	Lunch and go	

Appendix II: List of Participants

First Name	Last Name	Institution	Country
Solomon	Abeinge	Trax Ghana	Ghana
Kwabena	Acheremu	CSIR-Savanna Agricultural Research Institute	Ghana
Ekpor	Ackah	KNUST	Ghana
Paulina	Addy	WIAD-MOFA	Ghana
Solomon	Afuape	National Root Crops Research Institute	Nigeria
Edward Senaa Kofi	Ahiabor	Farmer	Ghana
Francis	Amagloh	UDS	Ghana
Kwabena	Asare	CIP	Ghana
Alphonsus	Belane	WAAPP	Ghana
Andrews		Bewda	Ghana
John	Bidzakin		Ghana
Ted	Carey	CRI-Kumasi	Ghana
Kwesi	da Costa Vroom		Ghana
AA	Dankyi		Ghana
Eric	Dery	CIP	Ghana
F.O.	Anno-Nyako	CSIR	
Ijeoma	Egeonu	University of Ibadan	Nigeria
Ganiyat	Fetugah	Food University of Agriculture Abeslcuta	Nigeria
Benjamin	Fiafor	Farm Radio International	Ghana
Tom	Gambrah	Premium Foods	Ghana
Naaminong	Karbo	CSIR-ARI	Ghana
Alexis	Loye		Burkina Faso
Robert	Nanes	IDE	Ghana
Sampson	Ndgeo	Bewda	Ghana
Vivian	Oduro		Ghana
Angela	Osei-Sarfoh	RTIMP-MOFA	Ghana
Dai	Peters		USA
Jennifer	Pierre-Satti	ILCAfrica	Ghana
Kate	Quarshie	Ghana Health Service	Ghana
Koussao	Some	INERA-Kamboinse	Burkina Faso
Adama	Tonane	Self-Help Africa	Burkina Faso
Susan	Torson	School Feeding Program	Ghana
Chris	Wheatley	Consultant (CIP)	New Zealand
M.Awal	Zakaria	CIP	Ghana

Leltuf	Abdul-Raihuan	PCD	Ghana

Appendix III: Tables for Discussion of Sweet Potatoes

Fresh root for cash market

Breeding	Priority	Short or long term	Linkage with other project
Breeding for market-accepted high-yielding variety	High	Short	Permits greater income for farmers will little land
Breeding for market-accepted early maturing,	Medium (should be site specific)	Short	More effective use of land and more crop production
Breeding for market-accepted high yielding OFSP	Low (doesn't need to be OSFP)	Short	Issue is dry matter content
Breeding for market-accepted varieties with long shelf life	High	Short	
Regional germplasm evaluation	High	Short	
Seed System			
Multiply and sell seed of improved varieties for market via existing seed supplier.	High		
Ways to assist more farmers to maintain seed during dry season • Life fencing to keep out animals • Access to water • Efficient use of seed	Balanced		
Production management			
Fertilizer trials to determine the optimal fertilizer application for the introduced varieties.	High		
Ways to decreased ridging labor (establish tractor	High		

rental enterprise?)			
Experiment and introduce best ICM practices.	High		
Postharvest			
Harvest method to minimize damage and improve quality	High		
Assessing postharvest loss to transport and ways to minimize loss	High		
Experiment fresh root storage methods for 1-2 months	High		
Trials to prolong shelf life	High		
Marketing			
Linking producers with collectors for direct collection	Extremely High		
Establish local collection center	Extremely High		

OFSP for nutrition

Breeding	Priority	Short or long term	Linkage with other project
Breeding for high DM OFSP		Medium	WTAAPP & RTIMP
Breeding for high yielding OFSP		Medium	WTAAPP & RTIMP
Purple flesh sweet potato for health		Short	WTAAPP & RTIMP
High Beta carotene		Medium	WTAAPP & RTIMP
Breeding for leaves		Medium	WTAAPP & RTIMP
Breeding for varieties		Medium	WTAAPP & RTIMP

that have lower perishability			
Seed System			
Multiply and sell seed of OFSP varieties via existing seed supplier		Short	
Ways to assist more farmers to maintain seed during dry season • Life fencing to keep out animals • Access to water • Efficient use of seed		Short	
Availability of market for seed supplies		Short	
Production management			
Fertilizer trials to determine the suitable fertilizer investment for food security crop (no cash income)		Short	
Ways to decreased ridging labor (establish tractor rental enterprise?)		Short	
Experiment and introduce best ICM practices.		Short	
Postharvest			
Harvest method to minimize damage and improve quality		Short	
Experiment fresh root storage methods for 1-2 months		Short	
Trials to prolong shelf life			
Introduce cooking		Short	

and eating practices appropriate within local food consumption practice to enhance nutrition			
Marketing			
Awareness campaign to introduce the benefits of ~~OFSP~~ sweet potato		Short	
Urban market institutional market complementary feeding			
Facilitation of multinational value chain			

SP as livestock feed

Breeding	Priority	Short or long term	Linkage with other project
Selection for dual-purpose—total biomass from root and vines	High dry matter starch, protein an starch ratio, high protein leaves, yield	Short-term	Root and tube program, West African Agriculture Production Program
Seed System			
Multiply and sell seed of dual-purpose varieties for market via existing seed supplier.	High Building supply chain for selected varieties	Medium	WAAPP, IDE, RTP, ACDEP, CIP-Seed System
Ways to assist more farmers to maintain seed during dry season • Life fencing to keep out animals • Access to water • Efficient use of seed			WAAPP, IDE, RTP, ACDEP, CIP-Seed System
Water Availability	Medium	Short	WAAPP, IDE, RTP, ACDEP, CIP-Seed System
Production management			
Fertilizer trials to determine the most appropriate practices to obtain the highest volume of vine & root biomass and livestock nutrition	High	Short	WAAPP, IDE, RTP, ACDEP, CIP-Seed System
Ways to decreased ridging labor (establish tractor rental enterprise?)	Low	Short	WAAPP, IDE, RTP, ACDEP, CIP-Seed System
Experiment and introduce best ICM practices.	Low	Short	WAAPP, IDE, RTP, ACDEP, CIP-Seed System
Postharvest			
Experiment with various vine silage	High	Short	Animal Research Institution, Animal Production Dept.,

treatments (also with roots, for the times when fresh roots prices are too low to sell.			District Agriculture Offices, Same NGO's
Feeding trials with silage			
Experiment with holistic system of crop feed and soil maintenance with intensified animal manure application		Medium	O~Ari Farm, UDS, UST
Marketing			
Feed			

SP as a processed product

Breeding	Priority	Short or long term	Linkage with other project
Fresh root characteristics	Shape, size high dry matter content, starch functional properties, low sugar content (except for juice)	Short-term	
Seed System			
Suited for large scale production	High	Short	
Postharvest			
Continuity of supply of fresh roots	High	Short	
Better handling, management, and transportation of roots	High	Short/Medium Term	
		Medium	
Marketing			
Development of marketing and promotion strategies			
Improves shelf life of juice beyond 24 hours			

Appendix IV: Status Report of Meeting Expectations and Actualizations

Sweet Potato Value Chain Research: Setting the Agenda for a Regional Program
Sixth Meeting of the Sweet Potato Support Platform for West Africa
Erata Hotel, Accra, Ghana
February 25-26, 2011

No	Expectations	Within Scope?	Status
1	To Learn more about options/potential as a cash crop	Y	Y
2	To learn more about OFSP to promote it	Y*(kind of)	Y
3	Have a structured commercial approach to sweet potato and create more demand	N	N
4	Make daily efforts useful for the value chain	N	Y
5	Make valuable use of data	Y	Somewhat
6	Have evidence to fund production of SP in Burkina Faso	Y	Y
7	Share best practices across countries	Y	Y
8	Structured, commercialization of SP through data	N	N
9	Obtain a higher price for sweet potato	N	N
10	Intensify promotion of SP and as a substitute for cassa-va/yams	N	N
11	Get more collaborators to push vitamin A supplement through sweet potato	Y	Y
12	More commitment from private sector	Y	N
13	Taste SP during conference	N	Y
14	Move a step ahead to multiply	N	N
15	Know more about findings on how farmers respond	Y	Y
16	To develop reason what needs to be done	Y	Y
17	To learn as much as possible	Y	Y*
18	Hear results of study and learn how to incorporate	Y	Y

19	What more can be done in SP	Y	Y
20	Update on proposals in Nigeria, share perspective on short and medium impact	Y	Y
21	Expect to produce sweet potato and be linked to markets to sell products	N	N
22	Understanding what value chain is about	N	Somewhat
23	See more adoption of technology	N	N
24	What is the key message to market SP	N	Y
25	Acquire better knowledge of management of sweet potato	N	N
26	Ghana finding will be the best quality work	N	Somewhat
27	Network with other breeders to get planting materials	N	Somewhat

Appendix V: High Level Summary of Survey Feedback

At the end of the conference, a survey was distributed to rate the overall satisfaction of attendees. Of the 35 attendees, 21 (60%) responded to the survey.

A majority of respondents indicated that the conference averagely met their expectations (3.1/5), however the quality of content was very high (3.9/5), and the organization of the meeting was most impressive (4.3/5).

Overwhelmingly, the four most cited and useful aspects of the conference were:

1) the value chain surveys and presentations from the three countries
2) the group discussions
3) the country status reports
4) the group work

On the other hand, there was little consensus and wide variation of opinions on the aspects on the least useful aspects of the conference. To synthesize participant feedback, most criticism centered on a lack of marketing research and marketing data around sweet potato. Secondly, participants complained of too short and too long time frames for discussion; however, there did not seem to be enough time to adequately address presentations and discussions.

In terms of improvements, participants also shared a wide range of valuable feedback. There were several suggestions to focus on marketing as well as a need for more days for the program. Secondly, some participants demonstrated interests in funding as well as the need to harmonize data across the presentations.

A summary of all feedback can be found in an annex Excel spreadsheet file called, “Sweet Potato Feedback Survey Results”.