FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

GENDER CONSIDERATIONS FOR RESEARCHERS WORKING IN GROUNDNUTS

May 2018

USAID
FROM THE AMERICAN PEOPLE

This publication was produced at the request of the Bureau for Food Security, United States Agency for International Development. This document was produced for review by the support of the U.S. Agency for International Development (USAID) under the Feed the Future Food Security Service Center, implemented by Social Impact. This document was prepared by Carol Tyroler. The views expressed are those of the authors and do not represent the views of the United States Agency for International Development or the United States Government.

Table of Contents

Executive Summary

Groundnuts are often referred to as a "female crop" due to the significant roles women play in production and processing across many developing countries. While men also produce groundnuts, gender roles and responsibilities tend to follow different patterns. Across the countries researched for this analysis (Ghana, Zambia, Malawi, Mozambique, Uganda, and Haiti), groundnuts are considered a subsistence, rain-fed crop, predominantly grown, managed and processed by women on small household plots ranging from 0.2 to 2 hectares. The majority of groundnuts women produce (over 80% plus in some places) goes towards household consumption, using any additional surplus for sale to local traders or in local markets as an income-generating activity.[1] In some countries, groundnuts are intercropped with maize, cassava, millet, and/or sorghum, all of which are susceptible to aflatoxin contamination.[2] Aflatoxin control is a significant concern for male and female farmers and for improving the supply for local, regional and export markets and to reduce public health risks for local populations – often ignored because health effects are not seen immediately.

Seed selection is based on male and female preferences. For women, this often is based on ease of production, harvesting, shelling, cooking, and processing; appearance; taste and familiarity, while for men yields and market value are more important. While constraints for both male and female groundnut producers exist in storage, aggregation of products, aflotoxin control, and overall production yields - female groundnut producers routinely face additional constraints in accessing productive land (and tenure rights), agricultural inputs, such as fertilizer and pesticides, and have less access to extension services such as agricultural training and information than male farmers. Acknowledging and understanding these differences is important for developing gender appropriate seed varieties, technologies and tools along the groundnut value chain.

Introduction

Because groundnuts can be a vehicle for improving food and nutrition security as well as alleviating poverty in rural areas in developing countries, it is important to better understand what men and women do within groundnut value chains and how these roles affect their overall well being. It is also important for researchers to work with actors along the value chain to understand what processors, marketers, and retailors need and want in a high quality peanut and to ensure this information is disseminated and shared with farmers groups that represent both male and female farmers' interests. Improved information will serve as a guide for research and programming to identify appropriate entry points along groundnut value chains to improve poor women's and men's inclusion and economic gains. This brief further raises key issues that should be considered to ensure women are benefiting from and have access to new seed varieties, tools and technologies appropriate to their roles and responsibilities in groundnut production and

[1] Rhoda Mofya-Mukuka and Arthur M. Shipekesa, Value Chain Analysis of the Groundnuts Sector in the Eastern Province of Zambia, Working Paper No. 78, IAPRI, September 2013; Using Applied Research and Technology Transfer to Minimize Aflatoxin Contamination and Increase Production, Quality and Marketing of Peanut in Ghana, Peanut and Mycotoxin Innovation Lab USAID; PMIL MacDonald, et al; PMIL Deom et al; PMIL Brandenburg et al., PMIL Jordan et al.

[2] PMIL MacDonald, et al; PMIL Deom et al; PMIL Brandenburg et al., PMIL Jordan et al.

processing. This guide also provides a snapshot of country-specific groundnuts issues, gender resources and tools for subsequent research.

Roles and Responsibilities

Women play significant roles in groundnut production and processing across many developing countries — so much so, that groundnuts are often referred to as a "female crop." However as groundnuts become more commercialized and profitable, more men are growing groundnuts as a cash crop. While both men and women grow groundnuts their roles and responsibilities tend to follow different patterns. Acknowledging and understanding these differences is important for developing gender appropriate seed varieties, technologies and tools along the groundnut value chain.

Across the countries researched for this analysis (Ghana, Zambia, Malawi, Mozambique, Uganda, and Haiti), groundnuts are considered a subsistence, rain-fed crop, predominantly grown, managed and processed by women on small household plots ranging from .2 to 2 hectares. Many female farmers are dependent on their peanut crop to resolve nutritional and financial household demands. The majority of groundnuts women produce (over 80% plus in some places) goes towards household consumption, using any additional surplus for sale to local traders or in local markets as an income-generating activity to augment family income.[3]

Despite this general pattern, women and men's roles in groundnut value chains vary. In some communities, women are entirely responsible for groundnut production — from planting to harvesting to drying — while men are in charge of marketing. In other places, men work alongside women in the field and make production decisions together. In others, storage, harvesting, weeding and processing, are considered predominately female activities, while land preparation, applying fertilizer or chemicals, and transportation to market are considered male activities. In some countries women also carry out duties on their husbands' groundnut plots before they invest time in their own plots. In such circumstances women also did the planting, harvesting, drying, sorting and shelling.[4]

Because women play such a critical and key role in groundnut production (and household nutrition decisions), it is important to consult them during design and subsequent research phases. Women have specialized, cultural knowledge that can be tapped into for groundnut production and processing.

Production

Groundnut production includes seed selection, land preparation, planting, harvesting and processing.

---

[3] Rhoda Mofya-Mukuka and Arthur M. Shipekesa, Value Chain Analysis of the Groundnuts Sector in the Eastern Province of Zambia, Working Paper No. 78, IAPRI, September 2013; Using Applied Research and Technology Transfer to Minimize Aflatoxin Contamination and Increase Production, Quality and Marketing of Peanut in Ghana, Peanut and Mycotoxin Innovation Lab USAID; PMIL MacDonald, et al; PMIL Deom et al; PMIL Brandenburg et al., PMIL Jordan et al.

[4] PMIL MacDonald, et al; PMIL Deom et al; PMIL Brandenburg et al., PMIL Jordan et al.

Overall women make production decisions about the groundnuts *they* produce and in some cases may make decisions along with their husbands for groundnuts produced on male managed plots, or on plots jointly managed. Production decisions for male produced groundnuts appear to be decided by men but may vary contextually. An outlier was in Haiti where *Madame Saras*[5] make their own production and marketing decisions. What was not clear was whether *Madame Saras* have access to larger, more productive pieces of land than was generally found across the other countries of research.

Due to women's overall disadvantaged position in customary and statutory land tenure systems across the developing world, female groundnut farmers commonly have smaller, less productive land than male farmers. Female groundnut producers routinely face constraints in accessing agricultural inputs, such as fertilizer and pesticides, and have less access to extension services such as agricultural training and information than male farmers. In situations where women do have access to improved lands, it is usually lent to them by family members, oftentimes their husbands, on a temporary basis as non-owners, further restricting women's security in producing larger quantities of groundnuts for sale to higher-value markets. Women's plots tend to be farmed less intensively than men's in part due to reduced access to financial capital, land that is smaller and less productive as well as limited access to improved seeds and information on improved farming techniques.

Seed selection

Men and women groundnut farmers may have different perspectives on what constitutes the *"right"* seed. Both women and men select seeds based on their preferences. Women tend to choose what they know, what works for them in cooking and food preparation, and ease of uprooting and shelling; they primarily use saved seeds. Men have greater access to certified seeds and extension services, and their preferences appear to be based on high yields, larger seed, and market demand.

In the development of new seeds it is important to consider what the associated changes for male and female farmers would be for growing, harvesting and processing (including time, size of area needed) and what the implications are for adoption, workload and profit.[6] It is also important for researchers to work with actors along the value chain to understand what processors, marketers, and retailors need and want in a high quality peanut and to ensure this information is disseminated and shared with farmers groups that represent both male and female farmers' interests.

While there was not specific information from projects reviewed, it is well documented that women in the developing world generally have less education and lower literacy rates than men. This indicates that groundnut training materials need to accommodate both women's and men's education and literacy levels, as well as be socially relevant using pictorial information that can be understood by more people. Furthermore, in order to adopt new varieties that increase yields and connect with demand-driven markets, women need information through appropriate media

[5] *Madame Saras* are traders in Haitian and play a key role in the groundnut value chain.

[6] Deom et al. An Integrated Global Breeding and Genomics Approach to Intensifying Peanut Production and Quality

outlets, female extension workers and existing groups that work and advocate for women farmers, as well as practical training, events and approaches. Examples of events and approaches might include female-only farm workshops, field days, information drives, or seed fairs that are logistically feasible for women to attend and use pictorial or audio information materials suitable to the targeted women[7].

Key areas that need improvement to stimulate greater female uptake of certified seeds include:

- **Seed Packing Sizes:** Packaging is generally too large and costly for small-scale producers (both male and female). Appropriate package sizes to meet the needs of small-scale producers could help with uptake. Women might need smaller packages while men may want packages a bit larger due to their size and production patterns.
- **Certified Seed Information:** Insufficient information exists for small-scale producers to understand why certified seeds are a better choice (higher yield, drought resistant, aflatoxin-free, etc.) In general women get even less exposure to certified and improved seeds and need more information on and experience with new varieties (certified/improved) that meet their needs. Finding female champions within communities to train and distribute information could be an impactful mechanism for knowledge sharing. It is important for researchers to understand that women are generally concerned with taste and cooking characteristics, while males might be more interested in yield amounts.
- **Seed Storage:** Where certified seeds are used, they may not be stored correctly to avoid aflatoxin contamination. This indicates that the private sector, extension workers, and farmers groups need to work together to ensure aflatoxin related training and information accompanies purchases of certified seeds and that the information is relevant and understandable to both men and women and their literacy levels. If women know how to save seeds properly to limit aflatoxin contamination, they may be able to grow and supply groundnut seeds to a potential market.
- **Gender Relevant Characteristics of Groundnuts:** Understanding the groundnut characteristics men and women want across geographies and evaluating whether the current or newly developed certified seeds have these characteristics is important for improved uptake. Traits might include shorter duration and pest-resistant varieties, taste, color, ease of use, amount of above ground vegetation for animal feed, and more; desired characteristics could be the same or different for male/female farmers.
- **Low Input Varieties:** Given women's overall smaller, less productive land space, research is needed into varieties that can provide moderate to high yields with minimal inputs.

[7] PMIL – Deom et al. An Integrated Global Breeding and Genomics Approach to Intensifying Peanut Production and Quality.

Varieties

Women's preferences for which seeds to plant are different than men's and based less on market value, but rather ease of production, harvesting, shelling, cooking, and processing; appearance; taste and familiarity. Women generally do not buy certified seeds but use saved seeds from last year's crops. If the seeds are not stored using best practices, the risk of aflatoxin contamination is heightened, reducing the salability of the groundnuts and increasing long-term health risks to the household.

When developing new seed varieties the following considerations and questions arise:

1. Can new varieties be developed to serve dual uses – household consumption and sale to markets?
2. Can seeds be successfully saved from year-to-year while maintaining phenotype and vigor?
3. Are the seeds appropriate for smaller, less productive lands with minimal inputs?
4. Do the varieties include characteristic preferences of female farmers in terms of ease of planting, storing, diets, taste, cooking, higher pod yield, early maturity, higher numbers of pods per plant and good pod filling, suitability for processing, etc.?

Land size and preparation

Men and women generally have separate groundnut plots and produce groundnuts for different purposes. In general, plot sizes are smaller and productivity is lower on female-only plots than male plots and on average female-only plots range anywhere 0.2 to 2 hectares, with 0.2 to 0.5 ha being most common.[8] Women and men mostly work their own individual lands, but in some places (Haiti, Zambia, Malawi, Uganda) they work jointly. A gap in information was the average size of male plots and what percentage of their fields is used in groundnut cultivation. While this may vary by country and household, understanding this information is key to having more in-depth knowledge of how invested men are in groundnuts and their relative contribution to production. Women tend to use labor-intensive, manual tools such as a hoe, axe or their hands to dig and prepare lands, while men often have access to newer tools, mechanized machines, hired labor or large farm animals to help them prepare fields.

Planting

Groundnut planting is done by both men and women on their own plots or done jointly when plots are managed together. Groundnuts are generally grown under rain-fed conditions, which makes farmers vulnerable to drought and variable rains. In some countries, groundnuts are intercropped with maize, cassava, millet, and/or sorghum, all of which are also susceptible to aflatoxin contamination.[9]

Disease and pest management

[8] PMIL MacDonald, et al; PMIL Deom et al; PMIL Brandenburg et al., PMIL Jordan et al.

[9] PMIL MacDonald, et al; PMIL Deom et al; PMIL Brandenburg et al., PMIL Jordan et al.

Women and men use different knowledge systems to manage diseases and pests. In some countries women do not generally apply agro-chemicals (for possible reasons such as pregnancy, weight of equipment, ill-fitting equipment manufactured for male sizes, or ability to afford them, etc.) but instead use local herbs and traditional methods to control common diseases and pests (e.g. early planting, using locally adapted varieties that are pest and disease-resistant, removing infected plants and replacing areas with new crops, especially if early infection is detected[10]). Men on the other hand are more apt to use agrochemicals in their fields on a regular basis. They have more access to extension workers, agrochemical suppliers and cash on hand to purchase these inputs. There are opportunities to improve women's access to disease and pest knowledge and practices while also learning from traditional practices that may be more readily applied.

Mobility

Women groundnut producers overall have less mobility than male groundnut producers. They have less time; increased vulnerability to security risks; limited access to markets, training and extension services; and the responsibility for children, schooling, cooking, taking care of the house, and if head of household, earning cash income for household. Female groundnut farmers have limited, irregular production amounts and typically do not use best practices to store either groundnuts for consumption or seed, nor do they aggregate their groundnuts. Women are also less likely to be part of formalized groundnut cooperatives or groups where new information, technologies and tools are often introduced because women mainly use groundnuts for household consumption. Connecting women with partners who can assist in storage and aggregation of groundnuts within communities at a central location would help increase female farmers' mobility and access to more improved markets.

Provided that women's mobility is less, research demonstration plots, trainings and informational gatherings should be located at more accessible sites for women – near their homes, community centers, schools, etc. Providing childcare during training events can also be effective across sectors to increase women's participation.

Workload/Time Barriers

Time constraints further restrict women from investing in new technologies or adopting new and improved varieties of groundnuts.

Many agricultural tasks women perform are less visible and are unpaid. In some places female groundnut farmers also do "male" tasks such as land preparation, applying fertilizer or chemicals, and transportation, whereas men do not do "female" tasks such as sorting, shelling and food processing and preparation. Men are also better positioned to hire labor for peanut production as needed because they may have more cash on hand. Some men and women are able to hire women for "feminine" roles and men for "masculine" roles. It is common for poor women to exchange labor with other women in harvesting and weeding with in-kind compensation. Women with sufficient expendable cash (few) are more able to overcome barriers to hiring labor and

[10] PMIL MacDonald, et al; PMIL Deom et al; PMIL Brandenburg et al., PMIL Jordan et al.; Rhoda Mofya-Mukuka and Arthur M. Shipekesa, Value Chain Analysis of the Groundnuts Sector in the Eastern Province of Zambia, Working Paper No. 78, IAPRI, September 2013;

accessing inputs and resources (e.g. purchasing improved seeds or renting land), and are more able to produce on a larger scale or to higher quality and sell to more profitable markets. The amount of time women spend on their groundnut plot is limited by other household obligations that are unpaid and often unrecognized such as cooking, cleaning and childcare, as well as duties on their husband's plots.[11]

In developing new technologies it is important to note who is actually adopting that which is being promoted. As technologies are considered, the following questions should be asked:

- (*Before technologies are introduced*) How much time will be saved and for whom?
- How might new technologies shift males and females time?
- How does the technology or practice shift the gender roles in the value chain?
- Is the new or upgraded technology capital-intensive or require a large initial cash outlay that primarily men, larger producers, or cooperative members would be likely to access?
- Are women able to access the financing needed to implement the technology?

Processing

Groundnut processing includes drying, storage, shelling, sorting, pressing and milling. Women are typically in charge of the harvesting and post-harvest activities including storage, sorting and food preparation. Groundnuts are processed into a variety of products in homes and in processing mills of varying capacity. Small-scale processing is done at home mainly for household consumption although women may home-process groundnuts on a small scale to sell, typically as a part-time occupation.[12]

Both women and men work in milling factories, with more men in managerial positions. Women and men appear to be paid the same, but men overall work longer hours due to fewer household obligations and thus may earn more than women. Because mills, like wholesalers and traders, buy from many sources, the risk of aflatoxin contamination is high particularly for unregulated local and national markets.[13]

Drying and Storage

Groundnut drying is primarily done on the ground – increasing potential for aflatoxin contamination. In some countries racks have been successfully introduced and utilized while in

---

[11] Rhoda Mofya-Mukuka and Arthur M. Shipekesa, Value Chain Analysis of the Groundnuts Sector in the Eastern Province of Zambia, Working Paper No. 78, IAPRI, September 2013; Archileo Kaaya, et al., Summary of Gender Report for Peanut CRSP VT 54: Gender issues in Aflatoxin Incidence and Control in Peanut Production in Uganda, Makerere University, October 26, 2007

[12] Rhoda Mofya-Mukuka and Arthur M. Shipekesa, Value Chain Analysis of the Groundnuts Sector in the Eastern Province of Zambia, Working Paper No. 78, IAPRI, September 2013; Archileo Kaaya, et al., Summary of Gender Report for Peanut CRSP VT 54: Christie, Maria. Integrating gender and increasing women's participation: experiences from Peanut, SANREM, and IPM CRSPs, Virginia Tech, USAID Seminar Series. Friday, October 12, 2012.

[13] Rhoda Mofya-Mukuka and Arthur M. Shipekesa, Value Chain Analysis of the Groundnuts Sector in the Eastern Province of Zambia, Working Paper No. 78, IAPRI, September 2013; Archileo Kaaya, et al., Summary of Gender Report for Peanut CRSP VT 54: Gender issues in Aflatoxin Incidence and Control in Peanut Production in Uganda, Makerere University, October 26, 2007

others farmers were not able to afford the associated costs nor understood the value in using the racks. In others, locally produced racks proved to be non-pest resistant (termites) and so producers stopped using them.

Groundnuts are principally stored and left on fields or in homes to dry until sold or consumed by households. Some farmers store groundnuts in jute, polyethylene bags[14] or in recycled bags that previously stored other crops such as rice, sorghum, beans, or cocoa.[15] In some places, like Ghana, traditional structures called *purpuri*'s are used for storing groundnuts[16] and one of the prior PMIL programs proposed using solar driers, but it is not clear if these were successfully adopted or scaled to other places.[17]

Until both women and men farmers (and consumers) have a greater understanding of and ability to manage the risks of aflatoxin contamination, uptake of improved drying and storage will continue to be an issue. To address aflatoxin-free drying and storage it would be useful to work on aggregation of groundnuts and affordable storage options at household and community levels. This would also help farmers potentially receive better prices because they could sell when prices were higher, as like many commodities, prices fluctuate throughout the year.

New technologies and practices could be developed or existing technologies and practices adapted for local gender differences, noting that women are predominantly responsible for drying and storing groundnuts sold into local markets or used for home consumption. When developing appropriate and affordable storage, it is important to consider that farmers and processors may have differences in the size of their harvest, storage duration, frequency of opening, storage vessels, and price points that affect their need for storage.[18] Shared storage facilities could be developed where both women and men share spaces or separated by women's versus men's crops. It would be important to consider whether men and women will want to store together or separately and this will most likely vary by country, community and household.

Shelling

Groundnuts are normally shelled by hand and most often by women. Farmers commonly wet their pods to soften their shells, causing considerable risk of contamination from bacteria, fungus, and aflatoxin. There have been attempts to introduce mechanical shelling machines (metal or wooden, electric or manual) to ease shelling time and labor. In such places women reported that metal shellers were harder to operate and required more physical exertion. [19] Wooden shellers

[14]https://www.researchgate.net/publication/267047637_Purdue_Improved_Crop_Storage_PICS_bags_for_safe_storage_of_groundnuts

[15] http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/128261/filename/128472.pdf

[16] http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/128261/filename/128472.pdf

[17] Jordan et al., Ghana, Using Applied Research & Technology Transfer to Minimize Aflatoxin Contamination & Increase Production, Quality & Marketing of Peanut in Ghana

[18] Jordan et al., Ghana, Using Applied Research & Technology Transfer to Minimize Aflatoxin Contamination & Increase Production, Quality & Marketing of Peanut in Ghana

[19] http://www.compatibletechnology.org/our-tools/emerging-technologies/groundnut-tools.html

were easier to operate for both women and men. Electric shellers were preferred to either metal or wooden shellers, and were easiest to use.

These simple technologies would appear to ease the time burden of women, yet seem to be used infrequently in the developing world. It is not clear why shelling machines are not more readily available and used. It would be helpful to better understand the association costs, training required and why uptake is limited.

Sorting

Sorting is generally considered a women's role. Women shell their own groundnuts, men's groundnuts and are hired to sort in milling factories. Women often allocate their best peanuts for sale and consume peanuts of lower quality that are often unknowingly contaminated with aflatoxins. This indicates that understanding the high risks of aflatoxin contamination is important and that information is not sufficiently disseminated to growers, households and consumers, particularly women who have less access and mobility than male farmers.[20]

Pressing/Milling products

Women press and mill their own products for household consumption. In processing factories, men are generally the millers.

- Are there pressing and milling technologies that exist or could be developed for home-based or community pressing and milling that would ease women's time burden and are cost-effective?

Cash flow to purchase inputs, services, and equipment

Generally speaking women have less access to cash for inputs (including certified seeds, tools for planting, harvesting, as well as means for transportation such as bicycles or money for buses/rides to bring products to markets or processors). In contexts where women have limited influence in decision-making over household earnings, they may be at a disadvantage in accessing inputs, services, and technologies for groundnut production, processing, storage, and marketing.

- Since women are generally the seed savers and are dominant in groundnut production, are there best practices and low-cost mechanisms where women could be engaged as seed growers?
- Are there improved technologies that could be used to teach women improved seed saving practices?
- Where women have limited control over household cash, what incentives do they have to adopt improved groundnut technologies and practices?

---

[20] Rhoda Mofya-Mukuka and Arthur M. Shipekesa, Value Chain Analysis of the Groundnuts Sector in the Eastern Province of Zambia, Working Paper No. 78, IAPRI, September 2013; Archileo Kaaya, et al., Summary of Gender Report for Peanut CRSP VT 54: Gender issues in Aflatoxin Incidence and Control in Peanut Production in Uganda, Makerere University, October 26, 2007

Access to information, agricultural organizations (farmer, processor, market), distribution channels

Overall women have less access to updated information on groundnuts – whether this is new seeds, new tools and techniques, market prices, etc. Women do have, however, significant local knowledge on low cost climate resilience strategies (often/sometimes), seed saving techniques, simple processing, and varieties that work for them over time, but this local knowledge often does not encompass aflatoxin control, mechanisms for improving yields or market information. Women's knowledge could be used to develop technologies that are gender appropriate, guide household nutrition needs and improve practices, help control aflatoxins, improve their linkages to markets, associations or groups, and work within women's time constraints.

In many places extension services may be gender biased – typically defining the 'farmer' of the household as the owner of the land or catering to male heads of households, further reducing women's access to services, trainings and inputs. **Some useful resources for targeting women successfully in extension services include:**

1. Integrating Gender and Nutrition within Agricultural Extension Services (INGENAES) by Jan Henderson and Kathleen Colverson at the University of Florida, where focusing on nutrition along with improved farming practices helps to build relevance to female production.
2. US Global Food Security Strategy, September 2016, focuses on nutrition-sensitive agriculture and integration of women into extension services.
3. Virginia Tech Gender and Peanut work - http://www.oired.vt.edu/peanut-collaborative-research-support-program-peanut-innovation-lab/

Additionally there are insufficient agricultural organizations that serve women included in research projects. Types of organizations that would be useful to include are women farmer's groups, Village Saving and Loan Associations (VLSA), cooperatives that represent women, women's advocacy groups, women's development associations, etc. Without the female perspective on the needs and differences of female and male farmers, female farmers' voices, needs and challenges are generally overlooked. Often, women are less likely to be part of cooperatives than males in part because women are less likely to be identified as being part of more formal income generating activities.[21]

Some of the areas that women in particular would benefit from a better understanding of groundnut production include:

- **Aflatoxin control** and to understand how aflatoxins can affect groundnuts during plant development, drying, storing from one year to the next, planting, harvesting and processing – and why this is important. This is particularly important from a health perspective, as women are the guardians of their household's food consumption.
- **Improved drying and storage** to reduce aflatoxin growth and contamination among saved seeds.

[21] http://www.fao.org/docrep/017/ap669e/ap669e.pdf

- **Proper short and long-term storage** practices and equipment or materials for such.
- **Best practices in seed saving, planting, harvesting and processing**.
- **Best practices in household processing** – peanut paste and other products
- **Where value can best be captured** and varietal and quality demands in local, regional or export markets (quality, aflatoxin-free, aggregation of product, consistency, etc.)

Mechanization

While mechanization among smallholder groundnut farmers is not widespread, new tools and technologies have been introduced in some places with success. For example, Compatible Technology International (CTI) introduced the lifter, sheller and stripper to male and female small-holder farmers in Malawi and continues to collaborate with farmer's groups, including women's organizations to expand uptake. Their tools are designed with women's stature and size, and are mobile to accommodate for women's preference to work together and socialize. The Lifer for example can be adjusted to accommodate different user heights.

Recognizing how mechanization might positively and negatively affect women and men is important. Female groundnut farmers may need different tools and technologies than males that are appropriate to their size, strength, time constraints, cost, roles in the value chain, or other cultural factors. Farmers traditionally harvest groundnuts by digging them with a hand-hoe and manually lifting the plants from the ground.

In development of new tools and technologies, women should be involved both as clients and providers of innovation because of their different roles, seed trait preferences and primary responsibility of processing of groundnuts.

- Are the CTI tools readily available to farmers and are there gendered constraints that are hindering greater adoption? For example, financial constraints and time needed to build and access lifters, sorters, or drying racks to control aflatoxin may prevent women groundnut farmers from adopting them.
- To what extent would women's and men's yields need to improve in order to make adoption of mechanized technologies profitable in the current market?

Compatible Technology International (CTI) developed the following groundnut technologies used in Malawi and Tanzania.

Lifter: This tool loosens soil using a blade and lifts the plant from the ground. It requires an oxen or small tractor and can be adjusted to accommodate the user's stature.

Sheller: This hand-operated tool uses a rotating disk to scrape groundnut pods so that they can more easily be shelled.

Stripper: This very simple tool uses an A-shaped frame covered with a woven mesh screen that strips pods quickly.

Testing kit: Currently under development, this kit will allow farmers and researchers to identify aflatoxin contamination.

Products/Marketing

Products

Groundnut products vary by name and use by country, but overall include shelled or unshelled; raw, boiled or roasted; flavors; paste, flour (used in household consumption in places like Zambia

and doesn't enter retail markets), oil, or peanut butter; candies, snacks, prepackaged ready-to-eat products including peanut-based therapeutic and supplemental foods (in Haiti this is unregulated); and haulm and pressed cake for animal feed.

In general women have less available groundnuts or groundnut products for sale than men because their production goes mainly to household consumption. When women have surplus it is sold individually to local traders or in local markets in very small quantities and sometimes processed into other products such as candied nuts, flour, paste or oil. Women are vulnerable to insecure surplus production and accept prices from traders who set the price they are willing to pay for shelled or unshelled groundnuts. Without sufficient information on groundnut demand, the supply chain, quality control, good storage techniques and pricing, women often sell their groundnuts at low prices as emergency and supplemental household income.

Aggregation of products

Given that women tend to produce at a very small scale and then sell individually to local traders and/or in local markets, if and when they have surplus, indicates that improving aggregation and storage of groundnuts could benefit women (and men) in the long-term. There is some indication that women and men in the same household sell their groundnut harvests separately and to different buyers/markets, however more information is needed.

Improving the scale of groundnuts available for sale by forming marketing groups and aggregation of product (shelled, unshelled, processed) could significantly benefit women and their households. Aggregating women's products could aid in their getting better prices and reducing their individual risk. Research activities could include linkages with women's farmer groups, organizations and associations to facilitate the organization of female farmers and aggregation and storage of safe groundnut supplies.

Market demanded qualities[22]

Peanut processors are looking for high quality, low-aflatoxin/ aflatoxin-free peanuts that can be processed into cooking oil, whole peanut snacks, peanut butter, and peanut-based therapeutic and supplemental foods. While the export market for groundnuts is highly regulated based on quality with specific limits on aflatoxin contamination, local markets are less regulated, although processing companies are paying closer attention to limiting aflatoxin contamination. Low demand for aflatoxin-free groundnuts and groundnut products by local consumers is often the result of a lack of knowledge about the seriousness of aflatoxin-related health risks, in part because there is no immediate health effect. In all countries of research, demand for groundnuts exceeded supply.

[22] https://www.cbi.eu/market-information/processed-fruit-vegetables-edible-nuts/groundnuts-peanuts-europe/; http://www.peanutgrower.com/market-watch; http://www.caes.uga.edu/global/feed-the-future-innovation-labs/peanut-mycotoxin-innovation-lab/Research/NCSU202.html

Product Development

To address the issue of improved groundnut products and access to more profitable markets for smallholder farmers, particularly women, it is useful to examine the following:

- Are there peanut-based products that women could be involved in developing and that could help them better capture value-added income?
- How well placed are women and men in the involvement of developing new peanut-based products?
- How can farmers meet the standards required of them to grow and process varieties that meet local, regional and/or international standards?
- Who is able to access value-added markets and why? For example, do women tend to sell more unshelled due to time constraints?
- What are the traits other than yield and climate resilience that breeders need to consider when implementing research? For example, are there varieties that might be preferred for early maturation, easier to intercrop, haulm development, etc. that farmers could easily grow and market?
- How do the often smaller volumes women grow affect their market access, especially higher-value markets?
- Are there existing products or processes where women are better placed to improve, create, differentiate or get certification for higher returns?

Aflatoxin

Overall wholesalers and traders have limited knowledge about aflatoxin contamination. They generally buy from a number of different suppliers (male and female) in varying quantities that increase the potential for aflatoxin contamination. Like small-scale farmers, wholesalers and traders typically keep their inventory in recycled, jute or polyethylene sacks. While sacks are often kept in homes or sheds to protect them from rain there is no temperature or humidity control.

Aflatoxin control is important to improve the supply for local, regional and export markets and to reduce public health risks for local populations – often ignored because health effects are not seen immediately. Because of the principal roles women play in groundnut production, it is important that they, along with male farmers, understand and know how to identify contamination at every stage including choosing quality seeds, planting (date, yellowing of leaves, leaves falling off, expected time of harvest), harvesting, pest control, storage, etc., as well as understanding the associated health risks.[23]

Women and men groundnut farmers need to value improved drying techniques and have the knowledge, equipment, and incentive to apply them. Aflatoxin contamination starts with buying and having **non-contaminated, quality seed**. If farmers don't understand or have the **knowledge to identify quality seeds from contaminated ones** the potential for contamination remains high. Because **proper drying and storage** are needed to reduce aflatoxin contamination, farmers need to have **improved, low-cost and accessible means to do so**. While some producers, traders and

[23] Aflatoxin Management Interventions, Education, and Analysis at Various Steps within the Value Chain, PMIL.

processors are aware of defective groundnuts (discoloring, mold, etc.) and may eliminate them for sale, rejected peanuts do re-enter the value chain and eventually are consumed locally. While increased knowledge could be an incentive to make changes in groundnut production, many may not be able to afford improved seeds or technologies. In general, women have more limited resources (in some cases no resources) to invest in drying and storage improvements. Coupled with lack of information about aflatoxin contamination and its effects, this lowers the overall uptake of improved storage and drying techniques that require investment.

There seems to be a disconnect between incentives offered at purchase for low-aflatoxin nuts and farmers' desire to make the most profit from their crops, particularly for women. Farmers (male and female) often hold on to their crop as a form of savings or wait to sell until prices go up, speculating on prices, and then sell small quantities only when cash is needed. Presenting incentives at each step along the value chain to deliver a high quality and safe peanut crop is critical to improving supply regardless of the market. Moreover, to ensure incentives are gender inclusive, incentives need to be done continuously and at a small scale, otherwise women producers won't be able to or have sufficient incentive to meet the standards and their small, local sales will get pushed out of the market.[24]

Key questions:

- Could a tool kit such as the one being developed by CTI in partnership with crop researchers at International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) be scaled-up and further developed to test aflatoxin at each stage of the value chain from seed, planting, harvesting and processing?
- Are there other institutions that are producing similar technologies to the CTI technologies?
- To what extent would women and men groundnut producers yields need to improve in order to make adoption of aflatoxin prevention technologies profitable in the current market?
- Would creating a market-based approach in which contamination is minimized because of consumer demand help in aflatoxin contamination? This would likely entail consumer education and appropriate testing and labeling of products, and would need to heavily involve women as both purchasers and growers for household use.

Market connections/options

Most female groundnut farmers only sell what is left over if and when they have surplus. When they are able to sell, it is to local markets or small traders. Men, on the other hand sell to small processors (their yield is larger) and to traders in larger amounts and are generally at the commercial end of the markets. **Women need capacity building on improved production practices, basic business skills and fair transaction negotiation**.[25] **Given women's limited access to and knowledge of markets, the following questions arise:**

[24] Unnevehr, Laurian and Delia Grace, Aflatoxins Finding Solutions for Improved Food Safety, CIGAR, November 2013.

[25] Christie, Maria. Integrating gender and increasing women's participation: experiences from Peanut, SANREM, and IPM CRSPs, Virginia Tech, USAID Seminar Series. Friday, October 12, 2012.

- What are options along the groundnut value chain to increase women's share of profits and cash flow?
- Could seed companies offer certified seeds at subsidized prices to women in amounts that make sense for them (coupled with relevant training)?
- Where does it make most sense for women to add value and linkages to markets? Assisting farmers with aggregation of groundnuts (shelled, unshelled, products) would help them get higher prices with processors/traders and reduce their overall individual risk.
- By raising productivity, will groundnuts become a male product? More men are found higher up the value chain. Will raising productivity displace women?
- When varieties are being tested, what possibilities are there for testing taste, ease of processing, growing cycle, and other characteristics where gendered preferences may differ?

Transportation

Women confront mobility issues including unreliable transportation, higher risk to security, lack of cash for transportation – all making them more reliant on traders or local markets that buy their groundnuts at very low prices. Further, women are often bound by gender restrictive norms that may not allow them to interact with men and businesspeople, particularly in public spaces. Men on the other hand are more likely to own bicycles, have greater access to cash for transportation, and have more freedom to negotiate publically. When thinking about ways to improve farmer's access to markets and connecting along the value chain, it would be important to consider transportation mechanisms that could help women reduce their overall risk and increase improved access, such as shared transportation or pooling resources to buy a vehicle for women farmers.

Haiti – *Madame Sara*'s are predominately women traders who are generally micro to small traders, moving goods between markets and at times aggregating up to the larger retail points. Groundnuts in the shell only change hands once from farmer to trader or twice before being shelled. Shelling is carried out by traders who pay for mechanical shelling services and then sell shelled nuts. The trading market is fragmented with a huge number of traders moving small quantities of goods between rural markets or towards urban ones. Small quantities are traded with minimal mark up (shelled versus unshelled) but no or little value added.

Adoption of Technologies

Groundnut producers may be more prone to adopt new technologies when it meets their needs, reflects their values and considers their time or resource constraints. Appropriate technologies need to be affordable, easy to use and relevant to the tasks farmers (male and female) have in groundnuts. For example, women generally have less cash, produce groundnuts in smaller and less productive plots, are smaller in stature, require tools and technologies that reduce their time burden, and need technologies that are especially relevant to

tasks typically under women's control and responsibility we've highlighted as such as planting, harvesting, sorting, shelling, seed saving, and drying.

Sales Decisions

In the countries researched, women sell their groundnuts separately from men and decide where to sell. Men decide where to sell their groundnuts (unless jointly managed) and sell to local traders, in local markets, and to processors. Further information is needed to better understand if successful examples exist of how male or female farmers work together to aggregate their groundnuts and why more are not following these success stories.

Women typically experience more difficulties in accessing favorable markets because they are less likely to belong to producer organizations (cooperatives, women's farmer's groups, etc.) that facilitate marketing processes, and operate in an environment where men take charge of commercial activities.[26]

Prices vary from season to season, depending on when the selling is done, whether it is a cash or credit transaction and the distance to the markets. In general, women have poorer groundnut market information and access to profitable markets than men. They are at the whim of male traders who decide on the price of their groundnuts.[27]

Stakeholders/ Organizations

It is important to include stakeholders and organizations that represent female farmers, not as an add-on, but integrated into the program from the start. Types of stakeholders and organizations that might be included are associations that represent female farmers and/or processors, business associations, women's groups, representatives of the international private sector that have a corporate social responsibility representative assuring gender is represented, female extension workers, etc.

Information and access to support services

Farmers need information about what constitutes quality peanuts (besides being uncontaminated), pricing along the value chain, negotiation skills, and technologies that reduce their time burden but are appropriate for their size, scale, and strength. Overall, women have less access to this kind of information than males and their access to support services in groundnut production is limited due to the heavy burden on their time, insufficient linkages with women's farming groups or support mechanisms, and blanketing of non-gender specific information and media outlets.

Women and men often have different means of obtaining information. An agricultural study in Bangladesh found that men received their information from agricultural service provides, government extension workers, field days, traditional forecasters, television, newspapers and school, whereas women obtained most of their information from the radio and neighbors,

---

[26] Christie, Maria. Integrating gender and increasing women's participation: experiences from Peanut, SANREM, and IPM CRSPs, Virginia Tech, USAID Seminar Series. Friday, October 12, 2012.

[27] http://pdf.usaid.gov/pdf_docs/pnaec206.pdf

followed by traditional forecasters[28]. It is also important to plan approaches where both women and men can effectively receive and engage with new information. For example, women farmers may be more receptive to or able to interact with women communicators, attend trainings that are closer to their homes, female-only demonstration sites, and learn from their peers by leveraging key women in the community, women's advocacy or farmer's groups. All of these may be more likely to lead other women to adopt new seed varieties, techniques and tools than using male communicators to transfer knowledge to women.

In designing and disseminating information about groundnut production and processing, aflatoxin contamination, pricing, etc. it is important to consider the audience and the gender differences in sources and channels of information and networks. While *how and where* women best receive information will vary by country and community, understanding that there are differences will better ensure women receive information targeted to them.

Control of income and money for inputs

Income from groundnut production appears to be predominantly controlled by men, although this may vary by country and household. In situations where women have excess to sell, it is unclear who is in control of this money. When men own assets, they are more likely to capture the majority of the benefits – unless project designers make a deliberate effort to change the distribution of benefits. Just because a woman may grow peanuts, doesn't mean that she necessarily controls the income derived from sales. Rural women's decision-making power is different across cultures, countries and within households[29]. By understanding that these dynamics and connections exist, researchers and technology innovators are in a better position to develop innovations that increase women's returns to agriculture as well as food security. Especially for crops which are considered women's responsibility and in situations where women have limited cash, both women and men must be convinced of the benefits to changes in household budget priorities, such as buying certified seeds or upgrading to improved tools and technologies (drying racks, sorting machines, etc.).

A good resource for looking at control of income and other empowerment areas is the Empowerment in Agriculture Index (WEAI). This innovative tool shows, on aggregate, where women and men are empowered within five key domains – agriculture production, resources, income, leadership and time use. A woman is defined as empowered if she has sufficient attainments in four of the five areas or by receiving 80 percent total weighted indicators across all five. The WEAI also measures exactly how women are empowered relative to men within the same household.[30]

---

[28] https://www.slideshare.net/ifpri/gender-and-climate-smart-agricultural-practices-evidence-from-bangladesh

[29] For example, in Haiti, *Madame Sara*'s play a dominant role in selling, trading and in some cases aggregating groundnuts, to a degree not seen in other countries studied for this analysis. Given their position it appears that they are the decision makers of what happens to their income from sold groundnuts, but more information is needed.

[30] https://feedthefuture.gov/sites/default/files/resource/files/weai_brochure_2012.pdf

Groundnut consumption and uses

In the countries researched groundnut demand exceeds supply, presenting opportunities to scale up production levels and improve quality. Groundnuts are used as a simple and inexpensive protein for household consumption in a variety of native dishes. They are also sold as a cash crop in local markets shelled, unshelled, and processed into peanut butter (on largest scale), paste, flavored and candied nuts, prepackaged ready-to-eat foods, flour, oil and feed for animals. At the retail level small-scale and larger groundnut processors sell for general consumption and also sell domestically through supermarkets. Processing companies sell prepackaged ready-to-eat therapeutic foods, and in some places, such as in Haiti, this industry is unregulated[31] (posing a huge issue with aflatoxin and overall quality regulation).

Recommended priority issues

This brief raises a number of key issues that should be considered to ensure women are benefiting from and have access to new seed varieties, tools and technologies appropriate to their roles and responsibilities in groundnut production and processing. The top five include:

1. **Acknowledging women's roles, knowledge and overall constraints in groundnut production:** Across all countries of research, women are central to groundnut production and use groundnuts primarily to feed their families and supplement household income when possible. Despite this key role, women face disproportionate constraints in land size, productivity, access to extension workers, inclusion in research programs, mobility, literacy and formal education, access to information, time, control over resources, and access to cash and productive markets, among others. The amount of time women spend on their groundnut plot is limited by other household obligations such as cooking, cleaning and childcare, as well as duties on their husband's plots where their work is often unrecognized by programming and the household. Given the multitude of roles and responsibilities women have in groundnut production, better understanding their roles and responsibilities and how they differ from men's is important in devising appropriate interventions along the value chain that help both female and male groundnut producers.

2. **Seed Preferences and Certified Seed Uptake:** In developing new seed varieties female and male trait preferences need to be considered as well as the associated changes for male and female farmers for growing, harvesting and processing (including time, size of area needed, etc.) and the implications for adoption, workload and profit. To stimulate greater certified seed and improved seed uptake, packing needs to be relevant to both male and female farmers in terms of size, cost and information on the benefits of certified seeds, as well as proper planting, harvesting and storage. Because women normally save

[31] PMIL MacDonald et al.

seeds, there may be opportunities to work with female farmers on improved seed storage and marketing saved seeds as a product for sale.

3. **Development of Appropriate Tools/ Technologies**: Identifying technologies and practices that are inexpensive, do not require outlays of large lump sums, and would be accessible to both women and men will aid in more appropriate technologies and their uptake. In the development of appropriate technologies, understanding the different roles as well as the constraints that men and women have is important. Neither male nor female groundnut farmers seemed to typically aggregate products either for drying and storage or for selling purposes. Improving drying and storage practices and equipment and technologies at the household, community, and larger levels that meet the needs of female farmers, accounting for factors such as smaller harvest size, lower cost, whether shelled or unshelled, and need for frequent opening and closing is key. Shared storage facilities could be developed where both women and men share spaces or separately by women's crops/men's crops. It would be important to consider whether men and women will want to store together or separately and this will most likely vary by country, community and household. Aggregation of products would help farmers reduce aflatoxin levels, sell to processors to receive improved prices, and reduce individual risk. Affordable technologies are important to cash poor farmers, particularly women who have less cash on hand. In developing new technologies it is important to note who is actually adopting what is being promoted. In development of new tools and technologies, women should be involved both as clients and providers of innovation because of their different roles, seed trait preferences and processing of groundnuts.

4. **Aflatoxin Control:** Because of the principal roles women play in groundnut production it is important that they, along with male farmers (and consumers), understand and know how to identify contamination at every stage including choosing quality seeds, planting (date, yellowing of leaves, leaves falling off, expected time of harvest), harvesting, pest control, storage, etc., as well as understand the associated health risks[32]. Both male and female groundnut farmers need to value improved planting, harvesting, drying, storage, and processing techniques and have the knowledge, equipment, and incentive to apply them.

5. **Partnerships with key organizations**: It is recommended that more connections are made with local and international organizations that work directly with women farmers and groups and know the sociocultural issues of the country and that these organizations and the women they represent are involved as key stakeholders and players in groundnut research and project implementation. Community-based platforms (such as VSLAs and village agent networks), trainer of trainers, community champions, study tours, etc. could be used to build context specific interventions, as well as including the private sector (seed sellers, processors and traders).

[32] Aflatoxin Management Interventions, Education, and Analysis at Various Steps within the Value Chain, PMIL.

Country-specific issues[33]

The following matrix highlights the key roles and responsibilities that men and women have in each country. While similar, slight differences exist, underscoring the importance of assuring a gender analysis is done to ensure interventions reach target beneficiaries, including women.

	Haiti		Ghana		Zambia		Mozambique		Malawi		Uganda	
Roles and Responsibilities	F	M	F	M	F	M	F	M	F	M	F	M
Planting	XX	X	XX	X	XX	X	XX	X	XX	X	XX	X
Weeding	XX	X	XX	XX	XX	X	XX	X	XX	X	XX	X
Harvesting	XX	X	XX	X	XX	X	XX	X	XX	X	XX	X
Processing												
Shelling	X		X		X		X		X		X	
Sorting	X		X		X		X		X		X	
Small scale home	X		X		X		X		X		X	
Mills	X	X	X	X	X	X	X	X	X	X	X	X
Seed Selection												
Certified		X		X		X		X		X		X
Saved	XX	X	XX	X	XX	X	XX	X	XX	X	XX	X
Drying and Storage												
Home or on ground in fields	X	X	X	X	X	X	X	X	X	X	X	X
Aggregation of Products	No	No	No	No	No	No	No	No	No	No	No	No
Knowledge of Aflatoxin	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Access to information and support services (Less L, More M)												
Farmers associations	L	M	L	M	L	M	L	M	L	M	L	M
Extension workers	L	M	L	M	L	M	L	M	L	M	L	M

[33] All table specific information is from PMIL

	Haiti		Ghana		Zambia		Mozambique		Malawi		Uganda	
Profitable Markets	L**	M	L	M	L	M	L	M	L	M	L	M
New Technologies	L	M	L	M	L	M	L	M	L	M	L	M
Land Size, Quality and Productivity												
.2-2 hectares	X		X		X		X		X		X	
Often > than 2 hectares		X		X		X		X		X		X
Educational attainment												
Low	X		X		X		X		X		X	
Higher		X		X		X		X		X		X
Mobility												
Less	X		X		X		X		X		X	
More	X**	X		X		X		X		X		X
Workload, time burden												
More	X		X		X		X		X		X	
Less		X		X		X		X		X		X
Control over HH income (generally)		X		X		X		X		X		X
Seed Trait Preferences (importance of)												
Taste and food Preparation	X		X		X		X		X		X	
Yield (XXX signifies more importance)	X	XX X	X	XX X	X	XX X	X	XXX	X	XXX	X	XXX
Uprooting	X		X		X		X		X		X	
Familiarity with Certified Seeds	X**	X		X		X		X		X		X
Market Demand	X**	X		X		X		X		X		X

*More X's denote a greater role ** Exception *Madam Sara*'s

Key Issues by Country

Across the countries studied, it would be useful to collect more detailed information on the gendered roles, responsibilities, and benefits along the groundnut value chain, by country and then aggregated to do further analysis. Improved information would help to identify appropriate gender technologies, practices, and means for increasing the potential benefits for smallholder farmers' particularly women who play key roles along the groundnut value chain and are often less likely to be able to tap into resources. The following outlines some key groundnut issues by country. The issues raised are not meant to be inclusive, but rather highlight some sociocultural and contextual differences noted during country document research.

Characterizing gender roles and responsibilities is important for better understanding and targeting technological and other interventions that don't create additional work for women and are monetarily beneficial to them either through earned income, a gain in household security, and reduced health risks from improved understanding of aflatoxin contamination. An improved understanding in gender empowerment and incorporating gender transformative approaches can contribute significantly to increasing the potential benefits for poor women participating in groundnuts in many developing countries.

The lack of gendered information is an impediment to better identifying gendered barriers, opportunities, and guidance for research and programming to identify appropriate entry points along the groundnut value chain to improve economic advancement, particularly for women who are often less likely to be able to tap into resources.

Haiti

Groundnuts are grown principally in the Central Plateau and in Northern Region of the Haiti with Valencia being the most common variety grown. While a significant portion of Haitian household farm production is characterized by larger "family" plots where both men and women contribute labor and often combine crops for cash and home consumption coupled with a smaller garden for women[34]. The quantity of groundnuts grown on larger "family" plots is unclear and poorly documented. Women's smaller gardens are better documented with most female gardens measuring around .2-.5 hectares. Haiti's short growing seasons (2-3 months) coupled with good growing conditions allows most farmers to produce 2-3 groundnut crops a year (3 with irrigation.) Haitians grow other crops along with peanuts (cassava, rice, sugar cane, corn, black beans and banana), but there is minimal information on how these crops are used and rotated[35].

Nearly all production is accomplished using small hand tools for tillage, planting, weed control and harvesting. Knowledge of improved production practices is limited, with little to no formal training. Local demand for peanut products greatly exceeds the supply. Yields are low (500-800kg/ha) as are prices $1.50/kg and groundnut quality is not necessarily addressed nor regulated,

[34] Gender Comments – K Jacobs, 25 November 2013

[35] MacDonald, et al., Production to Consumption – Improving Peanut Value for Haiti, Peanut and Mycotoxin Innovation Lab Project Proposal Concept Note

especially with respect to aflatoxin. The Haitian groundnut market is fragmented, with significant numbers of traders selling small quantities with minimal market-up and little value added[36].

As in other groundnut-producing countries, a major challenge is the lack of domestic appreciation for lower aflatoxin levels and consumers unwillingness to pay more for certified aflatoxin-free peanuts and products.

A unique characteristic of Haitian markets is Madame Saras. Madame Saras are women traders who are generally micro to small traders and move goods between markets - at times aggregating up to larger retail points**. Improving the understanding of their key role in groundnut production and trading could improve the development of gender-based tools, technologies, improving market functions and engaging, empowering and leveraging them in terms of female empowerment in Haiti. They could be trained on tools to forecast market needs and prices; become creditors for small farmers in remote areas; work to improve aggregation of small farmers; and trained on aflatoxin contamination and dissemination to female farmers and consumers**.

Gender information gaps include which varieties women and men utilized, more in-depth information on the role of Madam Sara's including their average land sizes, if normally heads of households or if not, if and how their income is shared within households, if they are also producing or just key traders and how they get their production for markets[37].

Ghana

Over 90% of groundnuts are produced in the north of the country on plots less than .2 hectares and produced by over 625,000 households[38]. Women trade and process groundnuts using rudimentary methods to produce oil, paste, cake, flour, fried groundnuts and make a local food called kulikuli, among others. According to a report from Nathan and Associates at harvest time labor shortages are paramount causing many to lose crops or hire out. Very little specific gendered information was available to better understand different roles along the value chain[39].

Zambia

Despite excellent growing conditions, **Zambia is among the lowest exporters of groundnuts in the region due to high levels of aflatoxin and low supply levels**. In Zambia groundnuts are eaten roasted, in candy, as a supplement in local dishes, as flour and as a spread (peanut butter).

---

[36] MacDonald, et al., Production to Consumption – Improving Peanut Value for Haiti, Peanut and Mycotoxin Innovation Lab Project Proposal Concept Note

[37] http://pdf.usaid.gov/pdf_docs/pnaec206.pdf

[38] http://africasoilhealth.cabi.org/wpcms/wp-content/uploads/2016/10/MADE-Groundnut-Diagnostics-Ghana.pdf

[39] Using Applied Research and Technology Transfer to Minimize Aflatoxin Contamination and Increase Production, Quality and Marketing of Peanut in Ghana, Peanut and Mycotoxin Innovation Lab

Mozambique

Women have different roles in the production of peanuts in different villages. In some communities, women are wholly responsible for peanut production — from planting to harvesting to drying — while men are in charge of marketing. In other places, men work alongside women in the field and make some of the production decisions. **Very little specific gendered information was available to better understand different roles along the value chain**

Malawi

It is estimated that one in five farmers in Malawi grow groundnuts (not clear if this is men and women) and provides more than a ¼ of small-scale farmers' income. **While groundnuts are grown in all 28 districts, 70% is grown in the Central Region.** In Malawi, it is common to grow groundnuts following maize, sorghum, pearl millet, cassava, sweet potato or sunflower.

In Malawi, land preparation, weeding, and planting are often done on fields that are managed together, while women always do stripping and shelling.[40] **While more research needs to be completed, one study in Malawi showed that there are strong gender beliefs and taboos in growing Bambara groundnuts[41]. This type of groundnut is connected to the conviction that only women who have had a child die can grow it. "It has been believed that the crop invites death to the household, but if a mother has already lost a child, they would be spared another death.[42]" Bambara cultivation is also used to instill fertility, healing and protection.**

Uganda

Groundnuts are the second most important legume crop, following beans. As in other countries of research men and women grow and harvest groundnuts in separate spaces and play different roles. Women often depended almost entirely on groundnuts for income, even though most groundnuts are consumed by their households.

Women generally preferred Red Beauty and Red Valencia to other varieties because of their suitability for local dishes. One study stated that women only "own" the peanuts grown in their gardens, but that men actually controlled all income gained from peanuts. Sociocultural norms influenced what is deemed appropriate for men and women to do in groundnuts and is important for better understanding gender dynamics and constrictions in peanut production. Women's unique position, different knowledge and spaces, reduced mobility and access to inputs must be taken into consideration in future training activities. It is also important to have a better understanding of women's participation in the market, informal and hidden though this might be.

---

[40] http://www.most.mw/gender-and-groundnut

[41] http://www.nri.org/news/2013/beliefs-taboos-and-gender-the-case-of-bambara-groundnut-in-malawi

[42] http://www.nri.org/news/2013/beliefs-taboos-and-gender-the-case-of-bambara-groundnut-in-malawi

Research also revealed a need to educate women in basic business practices and negotiating fair transactions. It calls for a better understanding of why indigenous knowledge in peanut production and consumption—such as pounding roasted peanuts and making peanut butter—is disappearing in rural villages. Finally, it suggests a need to target local seed varieties that women prefer for domestic use in aflatoxin control efforts, including the possibility of breeding for preferred characteristics[43].

Resources

The following resources may be useful in future gender and groundnut research.

Broad Gender Resources

1. Women's Empowerment in Agriculture Index _ https://feedthefuture.gov/sites/default/files/resource/files/weai_brochure_2012.pdf
2. Intervention Guide for the Women's Empowerment in Agriculture Index (WEAI) Practitioners' Guide to Selecting and Designing WEAI Interventions, March 2016
3. https://agrigenderjournal.com/2016/06/27/gender-integration-in-research-so-where-do-we-start/
4. Gate Foundation
    a. Creating Gender- Responsive Agricultural Development Programs, An Orientation Document, Gates Foundation, February 2012
    b. Gates Foundation Gender Checklist http://genderedinnovations.stanford.edu/images/Gender_Checklist.pdf
5. USAID Specific
    a. Gender Development Office + Gender Advisors (BFS, Regional)
    b. Advance Project Design Workshop– Gender Facilitator's Guide, USAID
    c. USAID ADS 205: Integrating Gender Equality & Female Empowerment into USAID's Program Cycle
    d. USAID Project Design Workshop: Resources for Engendering Project Design in Agriculture
    e. USAID Gender 101
6. http://agrilinks.org (many places)
7. WorldFish Gender Checklist, Tools for Gender Analysis, Gender Strategy Brief
8. FAO State of Food & Agriculture 2010-2011
9. http://www.ifpri.org/book-9075/ourwork/program/weai-resource-center
10. World Bank Gender & Agriculture Sourcebook
11. Virginia Tech
    a. http://oias-owh7843.oia.ad.vt.edu/wgd/

[43] Archileo Kaaya, et al., Summary of Gender Report for Peanut CRSP VT 54: Gender issues in Aflatoxin Incidence and Control in Peanut Production in Uganda, Makerere University, October 26, 2007

b. Briefing Sheet: Gender and Poverty Reduction (http://www.oired.vt.edu/wgd/Briefing GenderAndPovertyReduction.pdf)

Groundnut Specific Resources

1. Virginia Tech
   a. http://www.oired.vt.edu/wgd/documents/PeanutCRSPSuccessStory.pdf
   b. www.oecd.org/derec/unitedstates/36079702.pdf
2. http://www.ifpri.org/publication/women-agriculture-closing-gender-gap
3. www.peanutcrsp.org

Citations/ Bibliography

Aflatoxin Management Interventions, Education, and Analysis at Various Steps within the Value Chain, PMIL, USAID Innovation Labs.

Archileo Kaaya, et al., Summary of Gender Report for Peanut CRSP VT 54: Gender issues in Aflatoxin Incidence and Control in Peanut Production in Uganda, Makerere University, October 26, 2007.

"BEST Project." USAID Office of Food for Peace Haiti USAID, BEST Analysis 2013.

Bill and Melinda Gates Foundation. "Gender Check List." (n.d.): n. pag. Web.

Brandenburg et al., Southern Africa, Aflatoxin Management Interventions, Education, and Analysis at Various Steps within the Value Chain, 27 November 2013, PMIL, USAID Innovation Labs

Christie, Maria. Integrating gender and increasing women's participation: experiences from Peanut, SANREM, and IPM CRSPs, Virginia Tech, USAID Seminar Series. Friday, October 12, 2012.

Deom, Carl, et al., An Integrated Global Breeding and Genomics Approach to Intensifying Peanut Production and Quality, PIML USAID Innovation Labs.

Frontlines: Empowerment by Peanut: Zambian Women Boosted by Staple Crop, Feed the Future USAID, May/June 2013.

IFPRI Gender, Working at IFPRI Follow. "'Engendering Agricultural Research'." *LinkedIn SlideShare*, 30 Mar. 2010. Web. 20 July 2017.

Intervention Guide for the Women's Empowerment in Agriculture Index (WEAI) Practitioners' Guide to Selecting and Designing WEAI Interventions, March 2016

Jacobs, Krista, Working Session: Gender in Peanut and Mycotoxin Innovation Lab, USAID Bureau of Food Security, November 18, 2013.

Jelly-Schapiro, Joshua. "How Women Trade Amid Tensions in Haiti." *The New Yorker*. The New Yorker, 18 June 2017. Web. 20 July 2017.

Jordan et al., Ghana, Using Applied Research & Technology Transfer to Minimize Aflatoxin Contamination & Increase Production, Quality & Marketing of Peanut in Ghana, 25 November 2013, PMIL.

MOST. "Women and Groundnuts." *Most.mw*. N.p., 2017. Web.

Nathan Associates London Ltd. "DFID Market Development (MADE) in Northern Ghana Programme." N.p., Feb. 2014. Web.

Njuki, Jemimah. "Gender Integration in Research: So Where Do We Start?" *Journal of Gender, Agriculture and Food Security*. N.p., 27 June 2016. Web.

NRI. "Beliefs, Taboos and Gender: The Case of Bambara Groundnut in Malawi." *Natural Resources Institute*. N.p., 2013. Web.

Rhoda Mofya-Mukuka and Arthur M. Shipekesa, Value Chain Analysis of the Groundnuts Sector in the Eastern Province of Zambia, Working Paper No. 78, IAPRI, September 2013

Ruth Susella, Meinzen-Dick, Agnes R Quisumbing. "Women in Agriculture: Closing the Gender Gap." *Ifpri.org*. N.p., 2013. Web. 20 July 2017.

Staff. "Groundnut Tools." *CTI - Home*. N.p., n.d. Web. 20 July 2017.

Unnevehr, Laurian and Delia Grace, Aflatoxins: Finding Solutions for Improved Food Safety, CIGAR, November 2013.

USAID ADS 205: Integrating Gender Equality & Female Empowerment into USAID's Program Cycle

USAID Project Design Workshop: Resources for Engendering Project Design in Agriculture

USAID, The Peanut Collaborative Research Support Program (CRSP): 2005 External Evaluation Report.

Using Applied Research and Technology Transfer to Minimize Aflatoxin Contamination and Increase Production, Quality and Marketing of Peanut in Ghana, Peanut and Mycotoxin Innovation Lab USAID.

USAID Feed the Future, IFPRI, and OPHI. "The Women's Empowerment in Agriculture Index."

USAID. "The Peanut Collaborative Research Support Program (CRSP) 2005 External Evaluation Report." USAID, 2005. Web.

Websites

http://agrilinks.org

http://www.oired.vt.edu/wgd/Briefing GenderAndPovertyReduction.pdf

http://www.oired.vt.edu/wgd/documents/PeanutCRSPSuccessStory.pdf

www.peanutcrsp.org