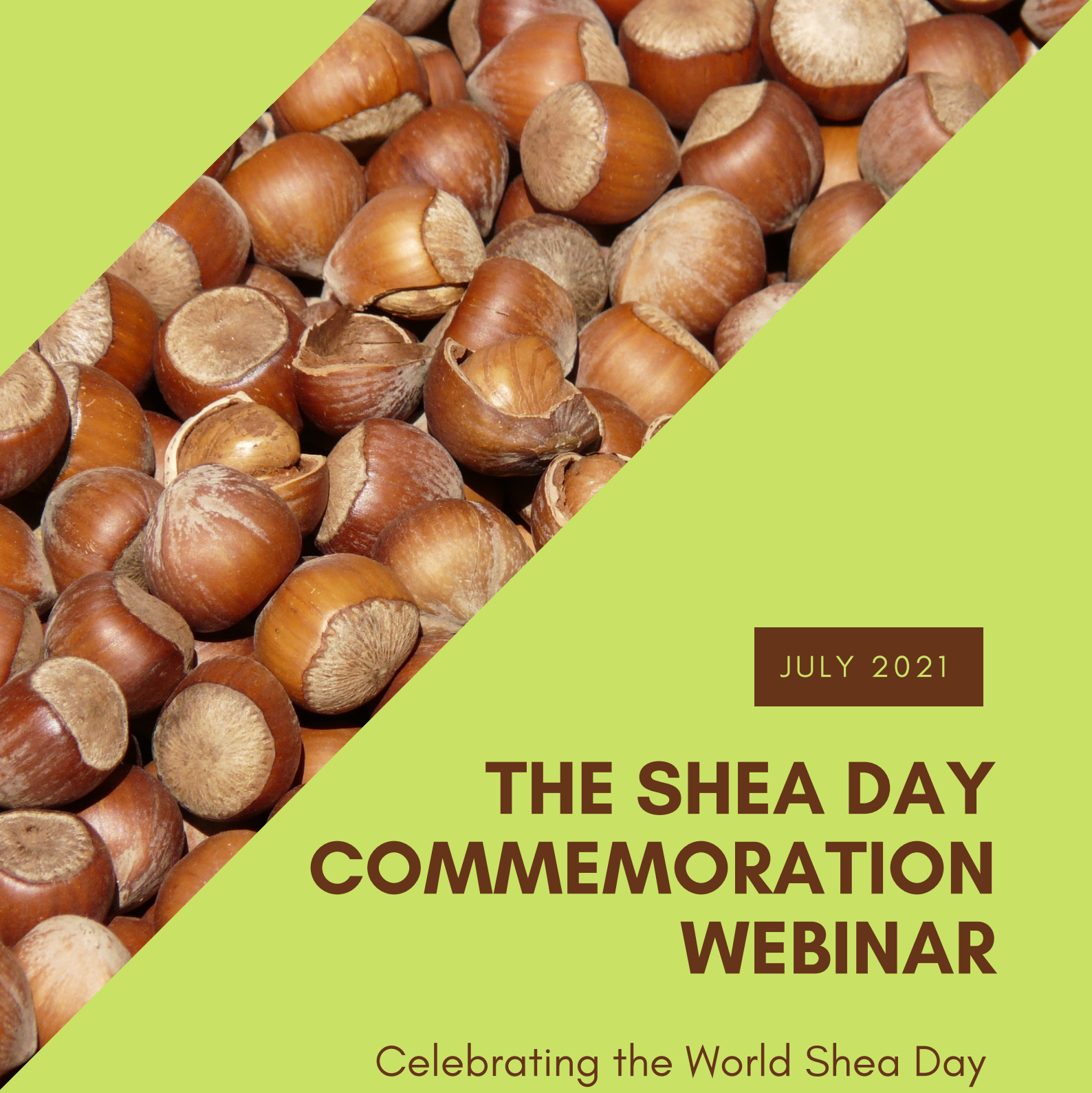

JULY 2021

THE SHEA DAY COMMEMORATION WEBINAR

Celebrating the World Shea Day

John Bosco Lamoris Okullo (PhD)
Cadreen Barungi Kabahizi
Florence Bangi
Frank Juuko

PROCEEDINGS OF THE SHEA DAY COMMEMORATION WEBINAR IN UGANDA

THEME: ENHANCING PRODUCTIVITY AND MARKET POTENTIAL OF SHEA NILOTICA FOR IMPROVED LIVELIHOODS: TAKE ACTIONS NOW

By

John Bosco Lamoris Okullo
Vitellaria Nilotica Consortium (VINICO) Ltd
Department of Forestry, Biodiversity & Tourism - Makerere University
Tel: +256-774/756-059868/
Email: johnboscolamoris.okullo@mak.ac.ug/jbl.okullo@gmail.com

Cadreen Kabahizi
Center of Faith, Family and Justice (CFFJ)
Tel: +256-787-421828
Email: cadreenah@gmail.com

Florence Bangi
Agro Value Added Association and Extension Services (AVAAES)
Tel: +256-788-999311
Email: bangiflorenceirene@gmail.com

Frank Juuko
Agro Value Added Association and Extension Services (AVAAES)
Tel: +256-781-488610
Email: franklinjuuko@gmail.com

Dated: 16TH JULY, 2021

Table of Content

Acknowledgements

I cannot express enough thanks to the participants, especially the keynote speakers and discussants who made this webinar a successful event. In a special way, I thank the organisers; Professor JB Lamoris Okullo, Bangi Florence, Byaruhanga Edwin, Enuru Thomas, and all those that put in tremendous effort in organising this event. I would also like to express my deep and sincere gratitude to the Center of Faith Family and Justice for the tremendous support they continue to render AVAAES in organising such events both technically and financially.

Frank Juuko
Founder, AVAAES

Executive Summary

On July 16th 2021, The Shea Day Commemoration Webinar brought together over 160 participants to celebrate World Shea Day.
The first of its kind, the webinar brought together several distinguished guests to celebrate the Shea Nut in their varying capacities. Scholars, policymakers, investors, consumers and well-wishers discussed various issues affecting the Shea Nuts over this 4-hour long commemoration.

The discussants offered rich discussions from their different perspectives on the entire Shea Value Chain and participants left with an overwhelming and renewed appreciation of the Shea Nut, its benefits and its potential to bring great economic benefit to its farmers, investors and traders.

Discussants identified many problems/gaps/loopholes affecting the Shea Value Chain and they prescribed potential remedies to alleviate or reduce them. Most notably, discussants agreed that: The Shea Nut is not nearly as invested in as it should be, by all the relevant stakeholders; There is a great need for Research and Development of Vitellaria Nilotica; There is also great need to satisfy the enormous ever-growing global demand of Shea Oil and Shea Butter; All stakeholders must come together to responsibly exploit the Shea Nut Tree; There is great need for the Government of Uganda to establish an over-arching Shea Development Authority.

The ardent hope of all the discussants and participants is that the Shea Tree and its products will be treated with due regard; promoted, protected, and planted for the great benefit of the shea communities, investors, and consumers.

Background

Every year the Shea Day is celebrated on July 16, 2021. In Uganda, the Agro Value Added Association and Extension Services (AVAAES), in collaboration with the Church of Uganda (Diocese of Lango), Center of Faith, Family and Justice (CFFJ), Vitellaria Nilotica Consortium (VINICO) Ltd and Makerere University (Department of Forestry, Biodiversity & Tourism) hosted a Zoom Webinar Campaign to commemorate the World Shea Day in Uganda.

The campaign is a collaborative effort to mobilise the Shea Stakeholders in Uganda and beyond to get involved in a longer campaign geared towards protecting and conserving the Shea parklands. Uganda's 2021 Webinar theme was "Enhancing Productivity and Market Potential of Shea Nilotica for Improved Livelihoods: Take Actions Now."

The webinar gathered together over 160 participants from across the world (Uganda, other East African countries, West Africa, United States of America, Europe and Asia). Through the 4 hour-long discussions, policymakers, academicians, investors, consumers and community members of the shea communities came together to celebrate and brainstorm on ways to promoting, planting and protecting the Shea Nut Tree in Uganda.

The Shea Day Commemoration

The event started with a video on Shea Nut Farming in Uganda and a song on the benefits of Shea in the northern shea belt.

THE SHEA DAY WEBINAR OVERVIEW BY DR. JOHN BOSCO LAMORIS OKULLO
Dr. John Bosco Lamoris Okullo- The Moderator (An Associate Professor from the Department of Forestry, Biodiversity and Tourism, Makerere University) welcomed participants to the event. He then gave an overview of the Shea parklands, why the Shea Day commemoration and expounded on the three Shea Day commemoration pillars: to 'Promote, Plant and Protect' the Shea Tree. He explained that the "Promote" and "Protect" aspects address long term and systemic factors behind the decrease in tree populations, while the "Plant" aspect showcases of immediate change and impact.

He noted that the commemoration of the Shea Day in Uganda was in line with the Uganda Government's present transformation agenda of localising Vision 2040 and The National Development Plan III for effective measurement and management of development interventions through the Parish Development Model (PDM) with the Shea tree as one of the commodity crop.

He ended by elaborating on the objectives, expectations and outcomes of the Webinar as follows:

Objectives of the Webinar

a)To discuss the relevance and commercial value of Shea butter/oil as one of the major products.

b)To interest all those who love Shea butter or Shea oil in the future of Shea trees and Shea parklands (that produce Shea nuts from which these products come from).

c)To expound on the importance and the emerging threats to the shea trees and shea parklands.

d)To brainstorm on key initiatives aimed at protecting and promoting the tree for improving local livelihoods and enhancing rural development.

e)To cultivate grounds for the establishment and expansion of the state-of-the-art shea butter processing in the Country

Expectations to achieve with the webinar

(i)Interest in developing actions geared towards sustaining productivity of the Shea Parklands initiated among Shea stakeholders.

(ii)Appropriate ways of supporting private investment in the shea industry suggested for incorporation into national and local policies.

(iii)Methods or ways of promoting the sustainable expansion of the shea industry and increasing regional and global trade in Nilotica shea proposed and recommended.

(iv)Make a contribution towards institutionalization of policies that will positively drive quality certification of Shea Butter as one of the nation's agricultural commodities prior to processing and export.

Expected Outcomes of the Webinar

1)A stronger future agenda for the shea trees and shea parklands crafted in the context of climate-smart agriculture to preserve the shea ecosystem.

2)Shea Stakeholders (both public and private sector) sensitized and mobilised to play a leading role in stopping shea parkland destruction.

3) A deeper understanding of the factors that shape households' participation in shea tree value chain as part of the Parish Development Model-PDM Pillar No.1 (Production, Processing and Marketing (Value Chain Development)

WELCOME REMARKS BY PROF. CHRISTINE DRANZOA

Prof. Dranzoa (Vice-Chancellor -Muni University, Uganda); thanked the participants for sparing time to actively take part in the webinar. She stressed that the Shea tree is one of the mono species among 250 other plants stretching from Senegal to Uganda. It is an indigenous tree that can last up to 250 years and thus can be a driver of the SDGs, serving communities in food, culture, fuel, trade, health and beauty. She called upon participants to always work towards protecting and preserving the Shea Trees. She also advocated for the promotion of Shea tree plantations instead of Eucalyptus plantations; an increasing trend in Uganda. Prof. Dranzoa concluded by officially declaring the Shea Day Commemoration Webinar opened.

SUMMARY POINTS FROM THE KEYNOTE PRESENTATIONS

Presentation on "Local Conservation Strategies for Improving Productivity and Sustainable Management of Shea Trees/Parkland in Uganda" By Mr Juventine Boaz Odoi

Mr Juventine Boaz Odoi, a Scientist from the (National Forestry Resources Research Institute (NaFORRI)-_National Agricultural Research Organization-NARO shed more light on the Shea belt (over 6,000 Km and 500 Km wide) which runs from Senegal to Uganda and Ethiopia. He went on to expound on the importance of the Shea tree as a commercially useful indigenous fruit tree species. He also elaborated on various research projects NaFFORI had run or was currently running on shea tree germplasm collections from different agro-ecological zones and its roles in enhancing local communities' livelihoods.

He also highlighted some of the local conservation efforts/strategies for improving productivity and sustainable management of shea trees/parkland in Uganda as follows:

- Use of traditional folklores, rituals, Totems and customs that is clearly supported by strong cultures, cultural leadership and communal ownership of the shea trees among the communities
- Efforts by civic society organizations, government departments, local leaders' engagement with communities to strengthened shea conservation practices.
- Enforcement of formal and informal rules governing the Shea butter tree backed by existing national and local policies, laws and regulations on Shea trees.
- Win-win scenarios in the conservation and use of the Shea tree where communities see that other shea products are more beneficial.
- Promotion of Farmer Management Natural Regeneration (FMNR), parkland regeneration and protection of mature trees on farms.
- Practising Ex-situ conservation where a one-acre shea gene bank has been established in 2011 at Ngetta Zonal Agricultural and Rural Development Initiative (NgeZARDI) by ICRAF in collaboration with NaFORRI and NgeZARDI.
- Another 16-acre shea BSO has been planted by NaFORRI at NgeZARDI and NASARRI composing 16 ethno varieties of shea trees in Uganda.
- Currently, a lot of planting and other conservation efforts of shea trees are being encouraged by public institutions, private companies and individuals throughout the shea parklands in Uganda.

Discussion on Conservation of Shea Nut Trees: Whose Responsibility? By Abak Robert

Mr Robert Abak (Resident District Commissioner-Nebbi District and Coordinator–Presidential Initiatives for Enforcing Conservation of Shea nut trees) shared the historical background of the Shea nut tree in Uganda. He exclaimed on how the rampant civil wars disrupted local people's livelihoods and that this paved way for the massive destruction of many highly valued indigenous trees including the Shea butter trees for charcoal production in an attempt to eke a living. He noted that massive destruction of the shea trees combined with the prevailing climate variability undermined the Uganda government's efforts to eradicate poverty and attain middle-income status by 2020.

Apart from that, he reiterated that the loss of Shea butter trees was a loss of our cherished heritage in Northern and Eastern Uganda.

In his discussion, Mr Abak also noted the following:

- Following the Presidential Directive of 2006 (for the protection of the shea tree due to its' economic and nutritional benefits), Environment Protection Police Unit (EPPU) had been established to protect the environment and natural resources (ENR) including the Shea trees).
- Uganda government also has policies in place like the National Forestry and Tree Planting Act (2003) that can be used to promote the conservation of Shea trees.
- In 2017, the Minister of Water and Environment suspended the cutting, transportation and sale of logs and other products from the Shea butter tree and the Afzelia Africana tree in line with Section 29(3) of the National Forestry and Tree Planting Act (2003).

The government has set up District Natural Resources Committees and lower local government Natural Resources Committees to conserve natural resources in general and in particular to do the following:

- Advocate for a reduction in charcoal production as a way to reduce the destruction of shea trees.
- Promote the use of alternative sources of energy e.g. biogas & solar power systems as alternatives to charcoal because they are relatively cheap.
- Train shea producers on the process of certification of Shea products to meet international standards through the Uganda Export Promotion Board (UEPB).
- Diversify on alternative income-generating activities e.g. beekeeping (excellent honey quality).in the Shea parkland to check on the destruction of the tree
- Mobilize the shea parkland communities to get involved in alternative economic activities e.g. Youth Livelihood Project (YLP), Uganda Women Entrepreneurship Project (UWEP) and Operation Wealth Creation (OWC).

He recommended that:

- Value addition should be prioritized so that Uganda can start exporting both semi-finished and finished shea products BUT NOT the kernels (raw materials) which is currently fetching very little money for the shea collectors.

- More research should be done on the biology of Shea (growth, productivity, quality, maturity & longevity). The last 2 years' harvest has been very low! The community thinks the trees are useless.
- All shea stakeholders (politicians, technical staff, non-state actors (NGOs, CBOs), religious, opinion and cultural institutions among others) should embrace the conservation of Shea trees as an important resource
- A management plan for the Shea parkland should be developed for effective conservation of the shea and other indigenous trees therein.
- Uganda government should strengthen the operation and effectiveness of district and lower government management structures e.g. inter-district coordination mechanisms initiated by the Kidepo Critical Landscape (KCL) project implemented by NEMA, UWA, NFA and other partners.
- Uganda government should gazette Shea parkland as a community conservation area on public lands across all districts in the Shea belt.
- Uganda government should encourage individuals to plant Shea butter trees on their lands and also assist the communities (through its relevant arms) in securing a reliable international market for Shea products.

He concluded that Shea butter trees provide many benefits and therefore is a great resource that should be used sustainably so that they can benefit both the present and future generations. He stressed that conservation of the environment and natural resources (Shea trees) is everyone's responsibility, so let us ALL join hands in the conservation of this precious tree (Green Gold) for 'United We Stand But Divided We Fall'

Presentation on "Community Empowerment for Sustaining Shea Production and Livelihoods in Uganda" By Mr Omara Patrick

Mr Omara Patrick (Managing Director of Qiles Care Limited), and a processor of Shea Nuts, gave an overview of the importance of empowering communities for sustaining Shea production and livelihoods improvement. He focused on social, economic, religious, political and environmental factors surrounding the communities in the Shea Parklands.

In order to effectively mobilise communities for sustaining Shea production and livelihoods improvement in the shea parklands, he argued that there is need to:

- Activate some of the existing networking typologies through information and material exchange, practical hands-on training, and sensitisation and policy dialogues among communities, investors and consumers.
- Develop actions for improving Shea productivity e.g. training the shea community on how to monitor the yield, source for credits, grade shea nuts and calculate profits.
- Unlearn and relearn the Shea collectors and work towards ensuring strict quality parameters for both shea nuts and shea oil.
- Diversify new income generation activities for the communities through combining shea nut collections with beekeeping, poultry farming, vegetable farming and other exotic fruit growing.
- Promote the planting of early maturing trees as an alternative source of firewood to stop the communities from cutting shea trees for charcoal production.
- Establish and promote training on value addition for complete Shea value chain
- Link farmers to markets through the formation of farmer associations so that they are able to advocate for better premiums for their shea products.
- Promote saving cultures, re-orient and retool on investment knowledge among communities in the shea parklands.

He concluded that sustaining shea productivity would improve the livelihoods of the farmers and contribute to the development of the rural communities.

Discussion on "Community Empowerment for Sustainable Shea Production and Livelihoods in Uganda" By Mr. Francis Sabino Ogwal

Mr. Francis Sabino Ogwal (Natural Resources Manager-Biodiversity and Rangelands) at National Environmental Management Authority (NEMA) observed that the Shea tree is an actual source of empowerment in which both women and girls are the most active in collecting and processing shea products. He noted that the women and girls would benefit more if the shea value chain was greatly enriched by increasing the amount of money paid to farmers for their products. He continued that since the shea tree has the potential to enrich the lives of women and girls in the shea parklands, the government of Uganda needs more public investments in the Shea tree and targeted research into its potential benefits and products.

He raised the following issues to be considered when implementing interventions to enhance community empowerment for sustainable shea production and livelihoods improvement:

Opportunities for improving livelihoods using shea butter trees as a resource;

- Training on shea value addition;
- Shea marketing; adherence to quality parameters; market information
- Ensuring quality shea quality control in the processing it as either hot press or cold press
- Awareness creation and sensitization,
- Formation of cooperative societies
- Diversification of household income sources– including beekeeping; shea products development.

He concluded that:

- The shea trees provide an opportunity to empower and transform the livelihoods of local communities – the resources occur naturally; products are organic, no use of fertilizers, market – local, regional and international market
- Protecting the shea butter tress in the shea parkland landscapes has the additional outcomes of protecting the local communities from advanced effects of climate change (resilience and adaptation to climate change), thereby enhancing their coping strategies.
- He recommended that:
- More investment is needed to promote the conservation/sustainable use of the shea butter trees and other endangered tree species in the shea parkland landscape.
- The use of biodiversity offsets should be adhered to as a way of ensuring no net loss or net gain from impacts of urban or infrastructure development on the shea trees in the shea parkland landscape.

P*resentation on "Opportunities and Challenges Faced in Value Addition and Marketing of Nilotica Shea in Uganda and Beyond" By Mrs Marion Etiang Busingye*

Mrs Marion Etiang-Busingye (the CEO and co-founder of MOHCA Beauty & Skincare Limited and the producer of Shea Care), expounded on opportunities and challenges faced in value addition and marketing of nilotica shea in Uganda and beyond.

She noted that there are so many data gaps that make it hard to understand the actual extent to which some aspects of shea farming and value chain are changing over time; Even then it should be noted that this could be due to the fact that shea farming and trading is part of the informal sector.

She elaborated on the shea value chain process consisting of (a) Picking/collecting of nuts (b) Drying of the kernels (c) Cold pressing (d) Filtration (e) Solidified raw Shea butter.

She elucidated that MOHCA creates value in her customers through 6 key activities (which are in line with certified standards) viz: (i) Supply Chain Management, (ii) Manufacturing, (iii) Marketing & Sales, (iv) Customer Service, (v) Quality Control and (vi) Research and Development. She reiterated that the following aspects should be considered when talking of Nilotica Shea value chain:

Understanding the Value Proposition

Potential Customers	Value Proposition
(B2C)	
Natural skincare market	Wild harvest quality conventional shea butter
Ingredient conscience	Organic shea butter
Specialised	Hand made products
(B2B)	Environmentally responsible
Cosmetic manufacturers	Well packaged products that are accessible and affordable
International retailers	Natural and wholesome skincare
Domestic retailers	Wild harvest quality conventional shea butter
Corporates/MNCs	Organic shea butter

Market Potential

Local market- Ugandans spend an estimated UGX 805B+ (~$212M+) pa on cosmetics and bathing soaps where purchases are primarily beauty lotions/products and skin-care products.

Regional market - Similar purchasing tendencies in Kenya and Tanzania, where Kenya consumers purchase at a rate of 2:1 vs. the rest of the region, we project another UGX 1610B+ (USD$420M) spent annually on cosmetics and bathing soaps.

Dr. John Bosco Lamoris Okullo

Global market – It is estimated that the global market for Shea butter will reach USD$2.9B by end of 2025 (approx. >10% will focus on the personal care industry). With Europe consuming more than a quarter of this export.

Good enough for the industry, the demand for shea oil is really high global. Organic Shea Butter is in very high demand, more especially with hand-made products which are considered environmentally friendly (See Regional interest).

Regional Interest in Global Cosmetic Market
Asia Pacific (39%); North America (25%); Europe (18%), Latin America (9%), Eastern Europe (6%) and Africa, Middle East (3%).

Most frequently asked questions when marketing
Local Retailers: SHOPRITE, CARREFOUR, QUALITY & CAPITAL SHOPPERS

- Are you registered?
- Are you certified?
- Can you be consistent?
- Is the packaging appropriate?

International Buyers: L'OCCITANE- ENPROVENCE, LANEíGE, íPSA, BIOTHERM, CLARINS-PARIS, SK-II, SISLEV-PARIS, SHU UEMURA, LANCOME -PARIS

- What is your potential annual production of Shea butter/nuts?
- What and how long can this be sustained?
- What is the growth potential?
- What certification do you have?
- How consistent are you in quality and reliability in service delivery?
- Can you handle logistics?

Major Marketing Challenges
She remarked that challenges in the value chain are mainly to do with the certification of shea products and other listed below:

Currently no active umbrella Shea association in Uganda
No singular body is promoting the Uganda industry at a national and international level, individual players are active but working independently need for collective cohesion. A collective effort would make greater advancements in improving the shea value chain in Uganda.

Local & international visibility of Shea Nilotica is still minimal. It requires a concerted effort at a macro level with industry players and getting INCI classification.

Differentiating Shea Nilotica from its West African cousin should be a key part of the marketing strategy. Much as Uganda may not be able to compete on quantity, however, it can compete on quality.

She continued that the huge market potential is a great opportunity for shea farmers and producers in Uganda to exploit. For instance, challenges related to the logistics of exporting shea products could be resolved by bringing in Courier Investors. The formation of an umbrella marketing body for Ugandan shea Nilotica products that can connect and bring together both producers and consumers of shea butter would be prudent.

Other opportunities to be exploited include, among others.

An opportunity to supply into sectors utilizing shea for cosmetics

- conventional market
- natural/organic market

Increased demand

- Population increase
- Increased demand for natural ingredients
- Customer discernment and understanding of ingredient traceability

Make Shea nilotica part of our national export strategy

Government support at a macro level

- Establishing Global best practices and incentives such as seen in Ghana
- Incentivizing and supporting local players in their growth

Utilising existing channels to create awareness

- Access to international trade expos (Dubai 2020 expo, Vivaness, In-cosmetics, Cosmoprof etc.)

- Accessing local and international retailers willing to stock products
- Working with trade and foreign missions
- Utilising the growth in digital marketing and e-commerce for the industry
- Improve logistic capabilities

Presentation on "Post-Harvest Handling of Shea Nuts" By Ms Margaret Laloyo

Ms Margaret Laloyo (Founder and Marketing Manager of Blessed Organic Release) made a presentation on the post-harvest handling practices in the Shea value chain. She noted that post-harvest handling right from fruits to the kernel is one of the most important value chains that set the pace for attaining high-quality Shea butter. Since post-harvest handling is vital for quality maintenance, shea kernels should be handled well as it preserves the quality of the shea oil and butter that would come out of the nuts.

She continued that since fruits, nuts, fresh kernels and dried kernels are very important, every stage of shea butter processing must be handled well to avoid microbial contamination and ensure the production of high-quality Shea butter. She said this was critical since the Ugandan Shea nuts are quite different from the Western African Shea nuts. They both require different handling and processing techniques, especially making un-refined (organic) shea butter.

She advised that, even if refined shea butter is easier to keep consistent and may not require the careful handling necessary to make good un-refined Shea butter, more research is needed to establish the best handling mechanisms for nilotica shea products. She stressed that Scientists should endeavour to provide evidence-based training to farmers to understand the best post-harvest handling practices for nilotica Shea.

She reiterated that we ought to work towards attaining suitable quality in Nilotica shea butter to achieve the following:

- Good quality would increase the market for the nuts and butter hence increased income for the rural communities.
- Good quality kernels would lead to high-quality unrefined Shea butter suitable for cosmetic, pharmaceutical and food industries.

- The world shea market is focusing on organic rather than refined shea butter and thus, there is an increasing demand for Premium Grade A Unrefined shea butter internationally.
- As we now know the chemical composition of the butter within the paradoxa kernel is remarkably different from the butter found in the nilotica kernel. Consequently, the difference in stability under oxidative stress, hydrolytic stress, metallic stress, thermal stress is profoundly different.
- All these require training, in some cases, re-education on evidence-based methods, procedures and protocols unique for nilotica shea butter.

Hon. Dr Betty Udongo, (An investor and processor of shea butter-based in Nebbi District) also noted that the biggest challenge shea producers/processors in Uganda face are maintaining high-quality shea products. This has been due to a lack of clear standards for shea products which have not been in place for a long time. Much as the Shea standards have recently been established (a significant step in the shea production process), attaining product certification from the Uganda National Bureau of Standards (UNBS) continues to be a nightmare for many producers. She, thus, recommended that the government and all stakeholders should invest heavily in the Research and Development of various marketable shea products based on proper standards.

She also supported others that the production scale of Shea Butter in Uganda is still very low, and even less of what is produced goes on to be exported. She suggested that quality control and maintenance in the shea value chain are vital if the Ugandan Shea product export market is to grow, and those producers should exert more effort in improving their technological methods of processing shea nuts into various products. She then recommended that all stakeholders should join hands to come up with a proper standardized post-harvest handling process to improve the quality of shea kernels sold to producers. This, she said, would allow the production of so many more nilotica shea products that can enter the global shea markets; since the demand for nilotica Shea Butter and its associated products are very high, especially in countries that are aware of its benefits. She concluded that the shea industry in Uganda is a great opportunity waiting to be explored.

Discussion on "Post-Harvest Handling and Quality Control: Opportunities and Challenges in Shea Butter Value Addition and Marketing" By Dr Francis Omujal

Dr Francis Omujal presented the following on the above topic.

- Shea butter comes from the fruits/nut of Vitellaria paradoxa West African subspecies) and V. paradoxa sub sp. nilotica (East African subspecies).
- The tree starts to fruit after between 10-18 years and can keep on producing fruits for up to 300 years.
- In Uganda, the shea fruits are available from April -May to September, peaking from June, July to August).

On production and value addition to shea butter, he noted the following:

- While Africa has 500 million fruiting trees and produces approximately 1,800,000 MT of shea nuts, Uganda's shea nut production is approximately only 385,000 MT; (21%).
- Approx. 35% of the nuts are gathered and 80-85% of shea butter is locally processed in rural households.
- Generally, less than 5% of shea butter is exported majorly for the cosmetics industry.
- This implies that the production of sufficient quantities of shea butter through mechanization and maintaining the quality of shea butter is crucial in order to scale up the production needs that can match the market requirements.

He also noted the following issues related to Post-harvest handling and processing of shea butter

- Shea fruit collection & depulping into nuts- has a direct effect on butter quality.
- Shea nut drying on the ground is still the main and widespread drying method.
- Shea nut shelling/de-husking into kernels is done by stone beating and hammering etc.)/winnowing
- Shea kernel drying is done in Sunlight or oven– This also has effects on the quality of the butter
- Sorting (broken, infected by mold)
- Storage of the kernels- risks of mold, effects on quality of the shea butter
- Pre-processing e.g. heating, roasting or grating

- Extractions of shea butter (artisan, mechanical, solvent etc.)
- Handling of waste i.e. shea cake still very challenging
- High need for proper storage of the shea butter.
- Refining of shea butter- Neutralization, deodorization and decolourization
- Fractionation of shea butter into olein and stearin.

Extraction technique	*Remarks*
Artisan/ traditional boiling	Process is cumbersome, tedious, time–consuming & returns are commensurate the energy, material and financial input
Mechanized Cold pressing (semi and fully)	reduced use of firewood and water, improved yield, efficiency Kernels are fed into boiler or heating chamber.
Centrifugal method	Improved quality
Solvent	Efficient, disadvantage of solvent residues & takes it way naturally
Combined mechanical & solvent	Very efficient
Biological Enzymatic	Uses water and soluble enzymes e.g. amylase, glucanase, protease, pectinase, cellulase and hemicellulose. Advantage Increased yield, improved and high-quality vegetable oil, improved quality of the residual meal; reduced fiber content, preserved protein properties of defatted meal, low–peroxide and free fatty acid values.

Shea butter specification

Moisture content 0.05- 3.0 % (FAO/WHO-2017); Colour: Yellow- orange

Refractive index: - 1.463; Melting point: - 340C; FFA (mgKOH/kg) <10 (UNBS standards); Iodine value (I2/100g): - 55-60; Peroxide value (mEq/kg) <10 (UNBS standard); Saponification value: 185-190.

NB: The artisan method produces high-quality shea butter that is associated with dark brown oil and a stronger flavour, which is the best indication that nuts have been correctly roasted before oil extraction and has a much longer shelf life.

Shea butter as Food

- Shea oil plays a significant role in household food and income security.
- Shea butter oil is used as a food accompaniment.
- Shea oil is a source of cooking oil and all the traditional foods.
- Shea butter is a baking fat.
- Shea butter can be used as margarine and other fatty spreads,
- Shea butter can also be used in confectionery and chocolates.
- Shea butter is also commonly used as a nutraceutical for lowering cholesterol

Shea butter as a cosmetic
Hand and body lotions moisturizers; Facial /body moisturizers; Sun screen /sun; care cream; Shaving cream; Bath oils; Lip sticks; Balms; Shampoos; Hair oils/hair food; Soap (hotel small soap); Shower gels and Massage cream

Consumer Frequently Asked Questions on the use of shea butter cosmetics:
Does this product contain synthetic oils? Does your product cause allergy? Is your product safe on the skin? Does your product contain petroleum products?

Note: Many cosmetic companies usually adhere to a false approach and mislead their customers, making a non-justifiable claim? Thus, the formulation of shea cosmetics with a multi-functional approach is essential.

Current trends in Shea skincare products

- Common slogan ; Cleanse, care, decorate, maintain and improve
- Use of active ingredients in the products (e.g. vitamins, bioactive etc.)
- No petrochemical products.
- No artificial preservatives.
- Organically certified products.
- Mildness and skin-friendliness, i.e., mimicking what the skin really needs

Benefits of shea butter as a cosmetic

- Moisturizer-Butter acts as emollient and humectant
- Protection from UV light- as sunscreen and sun-care products (removes free radicals are closely linked with ageing and oxidative stress in the skin).
- Anti-inflammatory activity- triterpene alcohols (amyrins, lupeol and butyrospermol) are associated with the synthesis and degradation of the structural proteins collagen and elastin.
- Anti-ageing of the skin- shea butter stimulates collagen and elastin synthesis
- Management of skin rashes and irritation-
- Anti-wrinkle activity on the skin- Contributed by triterpene alcohols, phenols, sterols etc.
- Management of eczema- triterpene alcohols.

Shea butter Markets and Related Marketing Challenges

- Shea butter is still unknown outside of the production area.
- Shea butter is seen to be a luxury and the flavour of shea is not everyone would want in their daily diet.
- Existing vegetable oil products at lower prices have affected shea butter products, especially as a food oil.
- Shea butter supply is still wanting in quality and quality and there is also a problem with the unpredictability of the supply.
- Inefficient processing techniques to meet the growing national and international demand.
- Trade-in shea butter is generally poorly organized.
- There are few options for shea butter.
- The Shea butter skin care market is still a niche.
- Product transportation is still challenge
- Poor packaging.
- Market linkages/channels are not well defined.
- High costs of organic certifications.

Shea butter market - Regional

- The current market for shea butter is majorly rural with very little in urban areas.
- There are few small scale companies/enterprises involved in shea butter processing and value addition.

Shea butter market- International

- The production volume of vegetable oil in 2020/2021 exceeded 200 million metric tons worldwide, with palm oil registering the highest- 75.45 million metric tons.
- Palm oil imports to the EU were a record 7.1 million tons in 2020.
- The global cosmetics market size was valued at $380.2 billion in 2019 and is projected to reach $463.5 billion by 2027.
- The international market for Shea butter/oil is majorly in the U.S. European Union, US, China, India and Japan.
- The exported shea butter is for industrial cosmetic, food and pharmaceutical applications.

- However, there is no documented statistics for shea butter exports in Uganda like other West African countries.

Existing opportunities for Enhancing Marketing of Nilotica Shea butter

- The high olein content in the Ugandan shea butter or the nilotica shea butter makes it a good and preferred ingredient for cosmetics and personal care firms.
- Shea stearin can have great application in chocolates.
- The rise in the use of cosmetics among men in their daily routine has shown increases in the market for shea butter.
- There is increasing interest in Shea butter globally for both food and cosmetics.

NB: Thus, more investment in improved post-harvesting and processing techniques plus value addition is essential and urgently needed in order to develop the shea butter sector and value chain in Uganda.

Presentation on "Institutional and Policy Incentives for the Development and Growth of the Shea Industry" By Mr. Tom. O.Okello

Mr. Tom.O. Okello (the Executive Director of National Forestry Authority-NFA) gave highlights on the existing institutions and policies with influence on the shea trees. He noted that Uganda currently has 2.5m hectares of forest cover and 1.2m hectares of woodland. The woodlands used to be 3.9m hectares but aggressive deforestation had robbed Uganda of so much forest and woodland cover over the recent decades as summarized below:

- Land under subsistence agriculture has increased from 8.4m ha in 1990 to >10.5m ha in 2019.
- Woodland (principal Shea habitat) has decreased from 3.9m ha in 1990 to 1.24m ha in 2019.
- The proportion of forests outside gazetted protected areas (Pas) has decreased from 70:30 to 41:59 respectively in 1990 and 2017 (we may have no forests outside PAs at this rate of deforestation).

He listed the following key governance institutions in Uganda:

a) Regulatory Institutions
Ministry of Water and Environment, Ministry of Lands, housing and Urban Development, Ministry of Tourism, Wildlife & Antiquities; National Environment Management Authority (NEMA)

b) Management Institutions
Local Governments at District and Sub-county levels; National Forestry Authority (NFA); Uganda Wildlife Authority (UWA).

c) Key Legal & Policy provisions
The Constitution of Republic of Uganda; The Land Act 2010- Sec. 43: Utilization of land according to various laws;

The Local Government Act- Has powers to enact ordinances and bylaws; The National Environment Act 2019 -Sec. 51. Declaration of Special Conservation Areas (prohibits certain activities) and Sec. 60 measures for conservation of biological resources in-situ);
National Forestry and Tree Planting Act, 2003- Sec. 6: Declaring of forest reserves as a site for the preservation of vulnerable spp. Sec. 17: Declaration of Community Forests after consultation with District Land Board (DLB) and community and approval of District Council. Sec 21: Private natural forests Sec 27: Ownership of trees; Sec 30: Reserved Species. Sec 31: Protected species on private land.

d) Key Enabling Policies
The Forest Policy 2001, The Decentralization Policy, Operations Wealth Creation (high-value crops), The National Development Plan III (inclusive growth, value chain development & industrialization- The Parish Development Model), National Strategy for the Conservation & Sustainable Use of the Threatened Shea Butter trees in Uganda 2015; Presidential directive of 2006 (protection & value addition)

He then concluded as follows:

- Deforestation, thus, remains the main challenge affecting Shea trees and has led to the drastic reduction in the shea habitat.

- There is an adequate institutional, legal & policy framework for the conservation of Shea trees with limited implementation
- The framework has not adequately protected & conserved the Shea trees (why & what should be done?)
- The community-based management approach has collapsed (can it be rejuvenated?)
- The trees are threatened and very vulnerable
- Opportunities for value chains research & development exist under the UIRI & MoSTI (awareness, access),
- NFA, NEMA and UWA in conjunction with local government have put in place legal and policy provisions to protect the shea trees. However inadequate financial resources have curtailed the proper implementation of such policies.
- Thus, more financial allocation is needed to enforce the conservation of shea trees and the shea parklands in Uganda
- Some areas of the Shea parklands should be gazetted as community protected forests.
- All relevant institutions should build the capacities of their staff and put more effort into preserving the Shea nut tree, the only perennial crop in northern Uganda.
- Formation and /or operationalization of a consortium that can unite all Shea tree stakeholders in Uganda is urgently needed.

Discussion on Institutional and Policy Incentives for the Development and Growth of the Shea Industry By Dr. Patrick Byakagaba

Dr. Patrick Byakagaba (a Lecturer in the Department of Environmental Management-Makerere University) noted that shea the tree continues to experience degradation despite existing legal protection including the tree being on the list of "reserved species" in Uganda's legislative framework: He noted that "Farmers will plant/preserve/conserve trees only when they perceive that the trees are more useful and beneficial than alternative land use activities" (Source: Neil Byron, 2011. doi.org/10.1080/14728028.2001.9752396).

He proposed the following Institutional and Policy Incentives that can be used to enhance the conservation of shea trees

a)Shea nut/butter producers should be supported to access and participate in global Shea commodity chains through certification, investing in superior production

technologies, logistics systems and technology transfer.

b)Support is needed to develop local Shea product enterprises through the establishment of incubation centres in universities, research institutions, and industry.

c)Undertake targeted research, education and training on the entire Shea tree value chain to enhance product development and differentiation.

d)Reduce current policy barriers to enhance local market participation, for instance, reduce the RED TAPE of certifying with UNBS.

e)Establish communication and information sharing platforms to improve access to market information of Shea products.

f)Support investments in production technology to improve the efficiency and quality of Shea products.

g)Provide incentives to enable Shea product diversification and differentiation to widen the market base.

h)Support shea nut/butter producers to mobilise capital/finance for strategic investments such as dryers, roasting and oil extraction machinery, refining and fractionation equipment, storage facilities

i)Develop shea butter quality standards and promote certification to increase marketability in niche markets abroad.

j)Ensure that sanitary and phytosanitary standards applied by developed countries are met in the country to widen the export base for Uganda's Shea products.

k)Enhance density and productivity of the Shea tree to ensure sustainable supply through provision of subsidies and extension services to landowners within the Shea belt.

l)Ensure that there is adequate physical infrastructure (storage, transport, electricity, telecommunication, internet etc.) that supports the Shea industry.

m)Formulate favourable fiscal policies e.g., tax reductions or rebates, subsidies, loan guarantee schemes, loans with low-interest rates to promote investment in Shea products and ensure an increase in the net returns.

n)Enhance financial inclusion in the Shea belt of Uganda in order to foster commercialization (market-oriented production) of Shea products.

o)Support forest law enforcement to prevent wood extraction of the Shea tree by facilitating local governance institutions and amending the legislation to have more deterrent sanctions.

p)Clarify and strengthen tenure rights of the Shea tree/stands under the different land tenure systems to minimise degradation.

q)Enforce land-use plans in areas with Shea trees to prevent the illegal conversion of Shea stands. This requires supporting local governments to develop land use plans and ensure compliance.
r)Build the capacities of landowners with Shea trees in aspects of forest and tree management, business management and organisational management and forest governance.

He concluded that:
Material and non-material incentives that can promote sustainable management of Shea stands/trees, product development and marketing are required for the growth and development of the Shea butter industry in Uganda. Duty bearers responsible for the enforcement of regulations on Shea trees will need to be more responsive in addressing the current and emerging threats to the tree, especially political corruption. The capacity of local communities in the Shea belt will need to be enhanced in aspects of Shea tree/stand management, business management, organisational management and forest governance. This will require a multi-pronged approach involving state and non-state actors.

Dr Anthony Egeru (Dept. of Environmental Management-Makerere University), emphasized the importance of addressing the basic needs of the people at the community level first as a way of promoting conservation of shea trees and enhancing community livelihoods. He noted that dire poverty among the shea parkland communities keeps them in survival mode and makes it hard for them to choose long term gains over the instant rewards they get from burning shea nut trees for charcoal production and sale.

He continued that if these communities had all their basic needs sufficiently met, they would be able to choose the long term gain of preserving the shea trees over the short term gains of cutting down these trees for charcoal. He suggested that economic development at the individual, family, community and regional levels ought to address this problem significantly.

Presentation on "Research and Development Prospects for Sustaining Shea Productivity and the Shea Industry" By Mr. Daniel Obua

Mr Daniel Obua, (a PhD Candidate- Sokoine University and Executive Director Clonal Solutions Uganda Ltd), highlighted the need for the training of professionals and farmers in various vegetative technologies like tissue culture, cutting and grafting techniques which have the potential to enable large scale production of better shea planting materials.

He explained the rationale for vegetative propagation of shea trees and related challenges as follows:

Rationale

- Rejuvenate the older shea parkland
- Shortening of maturity period
- Increased fruit and nut yields, uniform & reliable fruit yield
- Provides an alternative germplasm planting material
- Quick and massive multiplication of superior germplasm
- Sustainability and conservation of the shea parkland

Challenges

- Lack of expertise to manage tree improvement and quality germplasm multiplication.
- No state of the art in vitro laboratory for trees in the country.
- Shortage of planting materials

He proposed the following as a way forward for realizing large scale production of better shea planting materials:

- Training of more professionals in tissue culture technology.
- Training farmers on-farm (in-situ) propagation- grafting
- Establishment of state of the art in vitro laboratory within or closure to the Shea parkland communities.

Discussion on Research and Development Needs for Sustaining Shea Productivity & Industry" By Dr Clement Okia

Dr Clement Okia (An Associate Professor at Muni University) presented on "Research and Development needs for Sustaining Shea Productivity & Industry".

He started by noting the following about the Shea nut tree:

- It regenerates naturally and its seed is recalcitrant.
- Its population is threatened by farming and charcoal production.
- Shea trees take long to start bearing fruits (15-25 years).
- Shea tree population is dominated by old trees (7 trees/ha) and fewer young individuals (2 trees/ha) –signalling an old declining population.
- Shea trees are long-lived –over 100 years and remains largely wild –semi-domesticated.
- Vegetative propagation of superior genotypes would thus be a welcome idea now.

He then listed the following challenges to and opportunities for improving shea productivity

Challenges

- Lack of expertise in tree improvement
- No state of the art in vitro laboratory for trees
- Shortage of planting materials

Opportunities

- Plant improvement program at Makerere University
- Tissue culture laboratory at Kabanyolo and some NARO institutes
- Develop and commercialize the technology for raising planting materials –case of clonal Eucalyptus.

Dr Okia gave the following thoughts about Research & Development needs for the Shea trees, Shea Value Chain and Shea parklands

- There is a need for the shea producers to add value rather than just collecting and selling raw nuts.
- Affirmative actions are needed for managing natural wild populations (shea parklands) –which are still considered as common property resources.

- There is a need to promote participatory shea domestication based on preferred attributes.
- Establishment and management of field gene banks –research and conservation.
- Long-term funding for research and development of Shea trees and Shea parklands is urgently needed e.g. Can we follow up on Presidential Initiative on Shea; Could it be possible to create a centre for shea research and development in the North?
- Community training and incubation centres for shea and other tree products should be established and funded!!!!

Dr Okia then made the following conclusions:

- Sustaining shea productivity and industry requires recognizing the primary producers who have managed the shea for generations.
- Benefits from shea enterprises should trickle down to local people in terms of increased incomes and fair trade.
- Alongside advances in propagation and value addition, the use of natural regeneration holds a huge potential.
- Tap into women and youth to undertake value addition under Parish Development Model funding –provide push back to conservation
- Improvement is needed in the land and tree tenure arrangements in shea parklands to ensure its sustainability.

Presentation on "The Roles of Public Sector in Enhancing Shea Productivity for Improved Household Incomes and Rural Development" By Mr Okello Jaspher

Mr Jasper Okello (A Research Officer-Ministry of Science, Technology and Innovation-MOSTI) elaborated on how MOSTI as a Public sector can enhance shea productivity for improved household incomes & rural development.

He noted that:

- Building business models within a Science Technology and Innovation Ecosystem can contribute to improved quality of life, employment & wealth creation among shea stakeholders
- The establishment of intervention in the shea industry would encourage industrialization & economic development of rural areas.

- Public sector intervention could lead to the creation of new Shea firms and/or industries that act as avenues for commercializing new Shea products.
- The public sector intervention project thus would be a response to the need to create more jobs especially for youth, improve on the competitiveness of Uganda's shea products & firms, promote a culture of creativity & innovation, and improve the livelihoods of shea parkland communities & other Ugandans.
- Enabling environment needs to be created to enhance MDAs and DLGs implementation of the relevant regulatory framework for management and conservation of parkland resources.

He informed the participants that Uganda Government was due to approve a 5-year grant for the construction of a Research and Development facility specifically for the Shea Nut his facility would be located in one of the shea parklands districts and would host scientists involved in the comprehensive exploration of the Shea value chain. He was, however, quick to interject that while the implementation of the 5-year project would be able to tackle many existing research needs in the Shea Nilotica value chain, the proposal was yet to be approved.

Discussion on "The Role Of Public Sector In Enhancing Productivity of Shea Commodity Crop For Improved Household Incomes and Rural Development" By Professor Joseph Obua

Professor Joseph Obua (from the Department of Forestry, Biodiversity and Tourism-Makerere University) highlighted the following in response to the Role of the Public Sector in Enhancing Productivity of Shea Commodity Crop for Improved Household Incomes and Rural Development.

What is the public sector?

He defined the public sector as part of the economy controlled by the State. It is comprised of organizations that are owned and operated by the government and exist to provide not for profit services for its citizens.

He noted that research through Research and Development (R&D) institutions (such as Makerere University -MAK, National Agricultural Research Organisation-NARO, and Uganda Industrial Research Institute-UIRI) has generated outputs but has not produced the desired real change we want to see in Shea as a flagship commodity from eastern and northern Uganda that should be prominently visible in the local and export markets.

How then can the public sector contribute to greater productivity of Shea, improved household incomes and rural development?
To answer the above question, he compared Shea with coffee: two commodity tree crops with high market values in Uganda and beyond.

- Coffee is a flagship commodity crop that has brought the public sector and private sector to work together in the real sense of PPP e.g. Ministry of Trade, Industry and Cooperatives works with Coffee Cooperative Unions such as BCU and coffee exporters. Shea has not yet brought together the public and private sectors to work together in Public-Private Partnerships.
- Like UCDA, can we establish Uganda Shea Development Authority/Organization to enhance the productivity and market value of Shea products?
- Unlike coffee which is exported as raw material (coffee beans), Shea is not exported as nuts; in fact, shea is sold as processed products (oil, butter, shampoo, soap, lotion, Vaseline etc.).

ü In view of the above, it is realistic to observe that Shea can have a comparative & competitive advantage over coffee in leveraging public sector support to enhance its productivity and market value.
üSo, in many respects, Shea deserves to have a similar organization like UCDA to leverage greater support for it.

a) Finally, Shea parklands are found in the agro-ecological zone that covers large areas of eastern and northern Uganda. The agro-ecological zone (45 districts; 30%) is served by four Public Agricultural Research Institutes of NARO located in Serere (NaSARRI) – Teso sub-region, Nabuin (Nabuin ZARDI) – Karamoja sub-region, Ngetta (NgeZARDI) – Lango sub-region and Abi (Abi ZARDI) – West Nile sub-region.

b) Given the importance of Shea in the economies of these sub-regions in eastern and northern Uganda, it is logical to advocate for the creation of a Shea Research Institute to carry out research on the entire Shea value chain from propagation to commercial products for local and export markets.

c) Therefore, like coffee, Shea deserves to have a national research institute established and funded through a PPP arrangement like UCDA.

Recommendations
He recommended the following to be undertaken through a Public-Private Partnership (PPP) arrangement:

1. The establishment of a national organization responsible for coordinating all the dynamics related to Shea as a commodity crop - like it is the case with UCDA.
2. The establishment of a national research institute at the level of National Coffee Research Institute (NACORI)-initially starting as a Shea Research Centre under NaFORRI – and it can be located anywhere deemed appropriate in the Shea parklands and later the centre can be upgraded to a Research Institute)

NB: Coffee research began a programme under Namulonge but later became a coffee research centre in Kituza (Mukono) and now it is NACORI – one of the 16 institutes of NARO.

CLOSING REMARKS BY HON. SYLVIA AKELLO, FORMER WOMAN MEMBER OF PARLIAMENT - OTUKE DISTRICT

Hon. Silvia Akello raised the following issues before closing the Webinar:

- Commercial Agriculture should be avoided in areas with shea trees; Commercial agriculture requires the use of tractors and this means that trees need to be cut for the passage of tractors in the fields. MAAIF and NEMA need to advise these farmers to use ox ploughs instead.
- Long term Research on climatic change and variability effects on productivity of and fruit yields of Shea nut trees should be carried out in the shea growing areas.
- Rampant Bush Burning should be discouraged or minimized in the Shea parklands through the enactment of bye-laws against bush burning. Most districts in the shea parklands have cattle and always burn bushes to regenerate grasses for their cattle and in search of animal pastures. This widespread bush burning always destroys flowers and new fruits on shea trees.
- There is a need for affirmative action on male gender inclusion in the shea value chain. Most malpractices like bush burning and premature harvesting of shea fruits are done by men Thus, these men need to be sensitized to be more involved in the shea value chain.

- Product Diversification. There is a need to increase the number of products that are derived from shea nut trees.
- Zoning areas for shea nut trees to improve community development. All infrastructure including processing facilities, incubation centres and research facilities should be established in the shea belt.
- There is a need to encourage translation of proceedings/discussions on shea nilotica into different local languages in the shea parkland districts; radios and television in order to increase awareness among local communities about shea trees, shea nuts and the shea parklands.
- High political Turn- Over. All institutions involved in shea butter need to train local leaders on the plant, promote and protect aspects of shea butter trees to ensure shea sustainability.
- A strategic Public-Private Partnerships (PPP) and alliances need to be formed to facilitate the development of the nilotica shea value chain as a way of increasing the competitiveness of nilotica Shea Butter.

She noted that the event had been very successful and declared it closed at 7:00 pm EAT