

Support bamboo industry and SME value chains in Uganda: Selected cases



Ministry of Foreign Affairs of the Netherlands



This case study has been developed as part of the Dutch-Sino East Africa Bamboo Development Programme (Phase-II).
2021



Introduction

Bamboo is widely used by communities across Uganda. Local communities produce and make use of bamboo for house construction and production of crafts. It is also used for the production of granaries, production of basketry, bean-stakes, and fuelwood. A study by Bitariho (2015) illustrates that in Bwindi and Mgahinga locations, local communities live in bamboo houses and 84% of the products used in homesteads are derived from bamboo. This shows the importance of bamboo for meeting the sustenance needs, income, and employment needs of the local communities in Uganda. Bamboo in Uganda is an important non-timber forest product locally used for making handicrafts, furniture, construction, and generating energy. Studies put the current number of bamboo stakeholders at close to 41,000,000 (INBAR, 2018), with the vast majority of these actors found in the Mbale, Sironko, Kabale, Adjumani, Moyo, Rubanda and Kisoro districts of Uganda.

Activities towards organizing and mainstreaming the bamboo sector in Uganda are in their initial phases. In Uganda, production, consumption, and export data specific to bamboo material is difficult to determine. Much

of the bamboo used in households is not reflected in the formal economy and the data on exports of raw bamboo and edible bamboo shoots across borders remain largely undocumented. Based on the Government of Uganda's report, the combined economic value of non-timber forest products especially rattan, bamboo, and medicinal plants is valued at Ugandan shillings (UGX) 66 billion (USD 17,229,729) per year, accounting for 17% of the Ugandan forestry sector's contribution to GDP (GoU, 2002).

In 2019, the government created the 2019-2029 Uganda National Bamboo Strategy and Action Plan, which aims to stimulate the sector for job creation and enhance the contribution of bamboo forests to Uganda's economic development. According to the Bamboo Strategy, bamboo will contribute to 15% of Uganda's forest and land restoration targets by 2030. The Bamboo Strategy aims to plant or improve the management of 375,000 ha of bamboo by 2030 as part of Uganda's commitment to reforestation and land restoration. The Strategy also aims to create 150,000 full-time jobs in the bamboo sector.

Development Programme (Phase II) is triangular South-South cooperation to support livelihood development, food security and better environmental management by developing robust bamboo value chains and a sustainable bamboo industry in Ethiopia, Kenya and Uganda. It is a development effort with technical and analytical work to bring bamboo to the forefront of government's development agenda through knowledge generation, technology transfer, capacity building, value-chain, private sector engagement, investment promotion and policy development. The program, through South-South-North linkages with the Netherlands and China and between East African countries, strives to contribute to organizing the bamboo sector in the region.

According to the program's theory of change, one of the resulting areas is developing a pro-poor industry and SME value chains. Therefore, this case study explores how the bamboo industry and SME value chains in Uganda are performing through support from Dutch-Sino-II of INBAR.

The INBAR-led Dutch-Sino East Africa Bamboo

Program Objectives:

1. Pro-poor industry value chain development by strengthening and diversification of existing bamboo products;
2. Restore and sustainably manage bamboo resources contributing to decreased deforestation, enhanced sinks and increased climate resilience of ecosystem and livelihoods;
3. Creation of enabling environment and institution development, which are critical for attracting investors and supporting existing private sector players.

Implementation Period

April 2020 - Dec 2023

Implementers

Lead Impelementer: International Bamboo and Rattan Organization (INBAR).

Co-Implementers: Ethiopian Environment, Forest and Climate Change Commission (EFCCC), Kenya Forestry Research Institute (KEFRI), National Forestry Authority (NFA), Wageningen University and Research (WUR), Moso International BV, and Chinese National Forestry and Grassland Administration (NFGA).

Funding and Budget

The programme is funded by the Ministry of Foreign Affairs of the Netherlands with support of National Forestry and Grassland Administration, China. The total budget is €4,689,624 (USD 5,627,548).

Targets:

The program has a total of 28,500 direct beneficiaries, and the target groups are smallholder farmers, women, youth, SMEs and industries. In summary the program aspires to reach:

- 15,000 - 20,000 women and male smallholders;
- 5000 - 10,000 smallholder farmers / collectors;
- 2000 unemployed youth;
- 500 bamboo enterprises.



Challenges: Sustainable supply, quality, technology, cost and taxation

The development of the bamboo industry has been slow in Uganda, and several factors have contributed to this. However, the most important ones are as follows:

Limited bamboo supply:

The sector has difficulty in obtaining bamboo that is good in quality and meets the standards of the industry, that is, limited bamboo supply. Smallholders and community members have been destroying a lot of bamboo forests, and this has resulted in a scarcity of bamboo raw materials for industries.

Poor resource management:

Lack of sustainable management of bamboo, resulting in poor quality of bamboo. Bamboo is mostly extracted from natural bamboo forests, wherein it grows independently without any additional care.

High cost of planting materials:

The high cost of planting materials prohibits growers from investing in large bamboo plantations. In addition, inadequate capital for establishing and maintaining the bamboo industry.

Technology and expertise:

Limited technology and capacity for production and value addition. In addition, there is no dedicated and established institutional support that focuses on bamboo.

Low level of awareness:

Lack of interest among communities and private growers in bamboo planting, mainly due to negative attitudes (locals believe bamboo makes soil infertile, organized markets are lacking). Moreover, a lack of awareness of the possibilities and potential of bamboo, which is still considered a poor man's timber used for low-quality and less durable products.

Increasing taxation:

High taxation of bamboo products (value-added tax [VAT] excise duties); The upcoming industry needs to compete with imported products and cheaper alternatives.

Lack of coordination:

The bamboo sector of Uganda needs to be coordinated, as such stakeholders would collaborate to identify priorities, address bottlenecks, and eventually help support the growth of the sector.

“

... in the process, we have seen some challenges, and one big challenge the country has faced for years has been the issue of awareness. Many people thought bamboo is a weed, which is very difficult to eradicate, and therefore until very recently, nobody wanted to invest in bamboo planting.

Tom Obong Okello, Executive Director of Uganda National Forestry Authority



The opportunity:

Emerging bamboo market, timber substitution, increasing energy demand

Bamboo has a huge potential in terms of timber substitute products, energy products, fiber products, furniture and crafts, as well as soil and water conservation and climate change mitigation and adaptation. Uganda has a conducive environment for potential investors and entrepreneurs who would like to do business on bamboo:

Improved enabling environment: In its current form, Uganda has several legislative frameworks that can support the development and management of the bamboo industry. The country recently adopted a [10-year bamboo development strategy and action plan](#). The bamboo strategy is designed to improve the livelihoods of Ugandans, especially those living in rural areas, by raising the incomes of the poor people, increasing the number of jobs, and enhancing the contribution of bamboo forests to Uganda's economic development. It is aimed at propelling green economy development and achieving the domestic and international development targets and commitments of the Government of Uganda. The national bamboo strategy and action plan has an ambitious target to restore 375,000 ha of degraded lands with bamboo and sustainably manage 67,000 ha of bamboo forests and farms by 2030. It is also important to note that, in 2007, the Uganda Industrial Research Institute (UIRI) with the support of the China Bamboo Research Center established a training-cum-incubation centre for the production of bamboo toothpicks and furniture.

Private sector association: Bamboo sector stakeholders of the country have recently established and launched Uganda Bamboo Association (UBA), which is a platform for organisations and individuals who share resources, including knowledge and technology, in a bid to enhance bamboo production and value addition. UBA supports training on all aspects of bamboo production and processing, multiplication of bamboo planting materials, bamboo plantation establishment and management, value addition and marketing. It has the aspirations to be a lead organisation in product innovations and a key market player, locally, nationally and in the region.

Growing market: A large domestic and international market opportunity exists. Key product lines include nursery, bamboo pole, bamboo construction, bamboo furniture, handicrafts and ornaments, and industrial products. Several development sectors in Uganda require bamboo products, such as poles for construction, scaffolding, and use as props for the agriculture and horticulture industry, tea-picking baskets, coffee collection baskets, and mats for drying coffee. Baskets for agriculture produce packaging and collection, household utility items, and beehives all have enormous markets. In addition, bamboo souvenir products are in high demand. This market will be further boosted by the flourishing Ugandan tourist sector, which had about 1.3 million tourist arrivals in 2013.

Moreover, there is a huge demand for furniture; bamboo could fill in the gap. The timber furniture industry in Uganda is flourishing; timber working enterprises can be found along roadsides all over the cities, towns, and villages. In addition to domestic production, Uganda imports large quantities of furniture made of wood, steel, and plastic. During the year 2015, Uganda imported furniture worth USD 14.5 million, out of which, the values of metal furniture, wood furniture, and plastic and other furniture were USD 1.9, USD 9.8, and USD 1.4 million, respectively.

Bio-energy and carbon trade: According to Uganda National Household Surveys (2016), household firewood and charcoal was nominally valued at UGX 409.1 billion (USD 107,043,043) in 2009/10. Over 90% of the households in Uganda use fuelwood and charcoal for cooking and heating. Fuelwood is the predominant energy source in rural areas, and charcoal is the primary cooking fuel in urban areas. On average, Uganda imports activated carbon valued at USD 95,388 (2016 and 2017). Because of its versatility, rapid growth, and dense canopy, bamboo is also an excellent crop that can tap into the carbon market and help propel Uganda's green growth agenda to a high level.

Workforce: It is also important to note that nearly 50% of the population in Uganda is below the age of 25 years, and there is large-scale unemployment. Bamboo value chains, especially basketry and handicrafts, are known to create large-scale local employment.

Strategy to capitalize on opportunities

The Phase II-Dutch-Sino East Africa Bamboo Development Programme has the overall goal to enhance Climate Change Mitigation and Adaptation benefits by developing inclusive and sustainable industrial and SME bamboo value chains resulting in enhanced livelihood opportunities, food security and environment management in East Africa. This will be achieved through three pathways.

First, pro-poor industry value chain development by strengthening existing and diversification of product lines. Priority product lines include: furniture and crafts, bamboo energy, bamboo shoot, bamboo construction and industrial products (slat-based, stick-based and composites). The program takes value-chain development as its starting point, rather than fields, farms or forests, because most farmers make decisions on what to grow and how to manage based on the market need.

Second, bamboo resource development and management; this will be achieved by strengthening of bamboo nurseries that will enable the availability of quality planting material at affordable costs; species-specific restoration to cater to industry and SME; and sustainable management of existing bamboo in forests and farms. Both the pro-poor value chain development and resource development are highly inter-related. Without creating sufficient demand for bamboo poles, the restoration and sustainable management will not be possible. With increased demand, the interest and motivation of farmers to plant bamboo in their farms will increase, leading to income from sale of bamboo poles and intermediary products. Bamboo restoration, sustainable management and value addition will bring in climate change mitigation impacts.

The **third** is the creation of enabling environment and institution development. This is critical for attracting

investors, and support to existing private sector players. Enabling environment will be created by developing reliable supply chain, standards and certification mechanisms; development of institutional markets, market linkages and investment promotion. Most importantly, public and private governance mechanism in the form of multi-stakeholder platforms, and community associations at national and local levels, strengthening of government and community institutions will create an enabling environment for development and removing exiting bottlenecks in the sector. The initial push for market will be developed by strengthening institutions and domestic markets and further move to export markets which require higher quality and volumes of products.

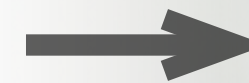
This case study, however, explores how the first pillar of the theory of change, which is developing pro-poor industries and SME value chains, is helping the bamboo industry of one of the target countries - Uganda.

Technology transfer and capacity building of smallholders, SME, industry, enablers, policy makers and extension:

- Skill development
- Product diversification
- Introduction of new technologies
- Strengthening industry and SME value chains
- Enhance business development services
- Forward and backward market linkages
- Sustainable supply of bamboo resource
- Supporting sectoral associations
- Exposure and study tours outside country of operation



Efficiently functioning SME and industries producing quality products with treated and intermediary components supplied.



Sustainable SME and industries with vertical and horizontal integration scaling up production, maximum biomass utilization with increased profit. Increased domestic and foreign trade and investment.





INBAR provided support to KBWL on training and capacity building of its staff, technology and knowledge transfer. The company received USD 5000 from Dutch-Sino (II) East Africa Bamboo Development Programme for staff capacity development (20 workers) during the installation of the machinery in March and April 2021.



Dr. Koojo Charles Amooti (Ph.D.), CEO of Kontiki Bamboo Works Ltd, talks about his company and his future aspirations in his bamboo business. Please click on the link above to watch the full video.

Kontiki Bamboo Works Ltd,
P.O BOX 47, Hoima,
Uganda
Tel: +256 772 522 707

Capitalize on opportunities: Kontiki Bamboo Works Ltd

Kontiki Bamboo Works Ltd (KBWL) is part of Kontiki Uganda Ltd, where majority shareholders have set up bamboo commercial growing and industrial value addition. The project is in Hoima district, specifically in the central core of the Albertine Graben area and potentially worth USD 300,000 per year, capable of creating over 50,000 new jobs in the next 10 years. KBWL is a market-driven initiative designed to function effectively in a rapidly evolving market place. Its success relies on being able to respond to opportunities and threats as they emerge.

KBWL's objective is to sustainably add value addition to bamboo and reduce the scale of poverty by creating income and jobs in the subregion and the country at large through working with partners both at the local level on expanding and intensifying bamboo production by small scale farmers to meet the demand of the processing industry, businesses and supply chain projects, and national and international levels on sector wide and strategic issues of importance to all engaged in the development of the bamboo sector. Work will be across the areas of:

1. **Businesses and markets:** Create business of the bamboo at all levels starting with information dissemination, seedlings, planting, advice, buying bamboo from farmers and creating bamboo value addition, technology transfer, business services, international and domestic business facilitation and trade fairs;
2. **Farmers and resources:** To support smallholders to produce bamboo efficiently and competitively in the market by training, field trials and agricultural development;
3. **Value addition:** To increase the value of raw bamboo at community

level, upgraded bamboo chain proposes to establish primary processing center at local level. Sorting, grading, treatment and primary processing of bamboo can add much value to the raw bamboo thus ultimately benefiting the local community;

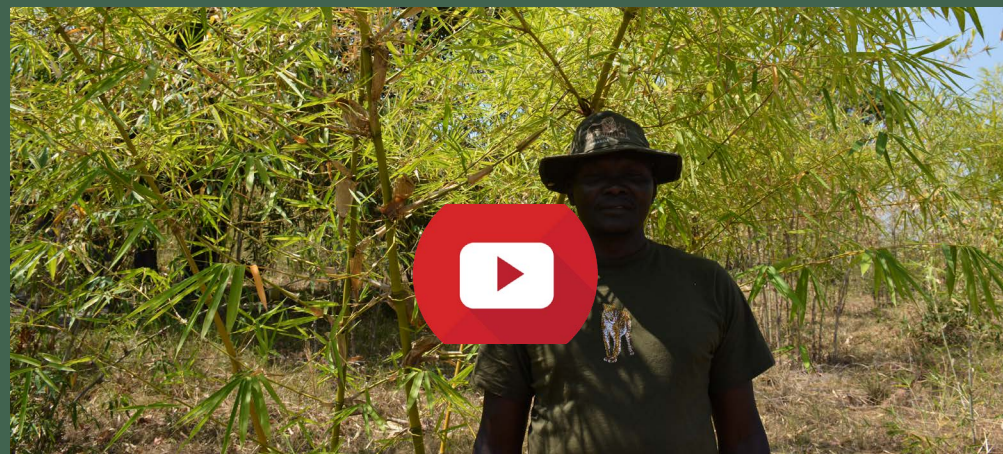
4. **Tourism activities:** Bamboo forest ecotourism has broad market prospects and a strong development momentum. Bamboo plantations will be developed as sightseeing and leisure, tourist attraction for trekking, nature walks, camping and for biodiversity. Based on bamboo zones, new tourism products can be developed, such as ecological oxygen bar and bamboo forest museum.

The company has its own nursery and currently employees 12 people (8 women and 4 men). It has a variety of seedlings and produces 100,000 each planting season. Moreover, it has its own plantation (141 ha) with 60 workers and also supplies to out growers (who will supply bamboo back to the company when mature). The target is to have 2000 ha of bamboo in the next 10 years (each year KBWL shall plant 200 ha as a minimum target). Kontiki intends to have a 1000-household village growing bamboo project. The company also has a factory (350m²) and a bamboo carpentry workshop built of bamboo, and it is currently manufacturing toothpicks (paper wrapped), skewers, incense sticks, curtain blinds, treated poles, and furniture from bamboo, such as chairs, tables and beds.

INBAR provided support to KBWL on the training and capacity building of its staff, technology and knowledge transfer. The company received USD 5000 from the Dutch-Sino (II) East Africa Bamboo Development Programme for staff capacity development (20 workers) during the installation of the machineries in March and April 2021.



INBAR supported the company through technical support on propagation, bamboo plantation management, sustainable harvesting, production of artisanal products and bamboo treatment. In 2019, INBAR provided FOB consult with a vacuum pressure treatment machine, which greatly enhanced the production quality and capacity of the company.



Fred Ijjo, founder and managing director of Friends of Bamboo Consult Ltd, tells about the background of his company and his future aspirations in his business. Please click on the link above to watch the full video.

FOB Consult Limited
Plot M7, Celecelea Road
Moyo-Uganda (Field Office)
Plot 1422, Salama Road, Kampala (Head Office)
P.O. Box 70175, Kampala-Uganda
Mob: +256 772 532 159
Email: fred.ijjo@gmail.com, fob.consults@gmail.com

Capitalize on opportunities: Friends of Bamboo Consult Ltd

Established in 2015 by Fred Ijjo, an environmental engineer, Friends of Bamboo (FOB) Consult Ltd is a company dedicated to the production of bamboo-based building components as an alternative material to promote affordable housing. It is the only bamboo-based company in Moyo district, Northern Uganda, that preserves green bamboo from natural forests using an eco-friendly approach and, through advanced clean technology, rapidly manufactures building components that are ready to install. The process of manufacturing bamboo building components permits the production of household items in bamboo, which includes indoor and outdoor furniture, fish cage frames and perimeter fencing. Manufacture of a range of products along the production process maximizes the full utilization of bamboo, including offcuts that otherwise would go to waste, thus reducing environmental costs.

The core activity of FOB Consult is the production, supply, and installation of bamboo housing components, which also includes free design and cost estimates. The vision of the company is to be a leader in the supply of affordable bamboo-based housing to both rural and urban populations in East Africa. A range of bamboo products to the name of FOB Consult Ltd includes wall panels, ceilings, floorboards, interior designs, fencing panels, and fish cage frames. The products manufactured are of the suitable quality for the purpose with a production process that integrates the low-income communities in the product value chain for mutual benefit to both the community and the company.

FOB Consult Ltd constructed a range of bamboo-based housing

prototypes and structures that include double story residential, 20m² detached living structure, 77m² workshop, 2600 L capacity preservation tank, and underground water tank reinforcement. Other projects include bamboo roof thatch at Cassia Lodge in Kampala and fish cage frames in Kalangala.

The company has established strong relationship with the local communities through purchase of green bamboo and working with the local youth in improving the traditional methods of construction and furniture production. Every month the company engages between 10 – 20 youth in activities ranging from bamboo harvest, preservation, panel making, construction and bamboo propagation. This gives confidence for the organization to effectively mobilize and engage the communities for the proposed bamboo technology training programs. It has also established bamboo nursery from which participants will learn tips on bamboo propagation and plantations.

FOB Consult ltd has highly dynamic team members with backgrounds in design, engineering, and craftsmanship. Currently, the company has 20 employees (8 women), and it has a working capital of USD 20,000.

INBAR supported the company through technical support on propagation, bamboo plantation management, sustainable harvesting, production of artisanal products, and bamboo treatment. In 2019, INBAR provided FOB consult with a vacuum pressure treatment machine, which greatly enhanced the production quality and capacity of the company.





INBAR has been working with Boogaali Bikes on public awareness events on World Bamboo Days to promote bamboo and its utilisation.



In this interview, Kasoma Noordin, founder, and owner of Boogaali Bikes tells about his company, the products he produces, and his future aspirations. Please click on the link above to watch the full video.

Boogaali Bikes Uganda Limited
Cohen Road, Makanga Hill, Kabale, Uganda
+256 706 799101
+256 782 370048
<https://boogaalibikes.com/>

Capitalize on opportunities: Boogaali Bicycles Limited

Boogaali Bicycles is a small-scale company founded by Kasoma Noordin, a former electrician who has a passion for bamboo, in 2013. The company is located in the Kabale district of the Western region of Uganda and produces bicycle frames made from highland bamboo. Boogaali Bicycles Ltd aims to bring the potential of bamboo to a higher level. Each one of the handcrafted bicycle frames is a beautiful, unique, highly functional work of art that is guaranteed to move riders' hearts and souls.

The founder of Boogali, Kasoma, believes that bamboo is nature's perfect plant. Strong, light, and durable, bamboo can be used to create a wide variety of functional and beautiful products. It is all-natural and easily renewable. When crafted into a bicycle, it helps promote an environmentally friendly and healthy lifestyle. Every renewable bamboo bicycle on the road reduces the number of vehicles clogging our crowded roadways and helps improve air quality for all.

Boogaali bamboo bicycle frames are hand-crafted, one at a time to meet the exact specifications of end-users. The company builds Road, Adventure, Gravel, or Mountain Bike frames that exceed expectations in terms of quality and performance. The frames are not only beautiful but provide an exceptional quality of ride that has amazing vibration dampening characteristics and incredible durability.

Currently, the company buys bamboo culms from local community members and the culms are selected based on the wall thickness and

diameter of the tube making highland bamboo culm the best option for the bike frames. The current working capital of Boogaali is estimated to be more than USD 10,000, and before the outbreak of COVID-19 the company used to build ten frames per year based on orders put by clients usually from Europe, Canada, and the US. Boogaali sells one bike frame for USD 500.

The company has a five-to-ten-year strategic plan to have its own bamboo plantation farm and a bamboo bike training institution to train young people interested in building bamboo bike frames and who would like to know about bike mechanics. Another aspiration of the company is to work on cycle tourism, so that tourists can use bamboo bikes while making their tour travels from place to place. The founder argues that many people use cars to tour around Uganda and other countries in Africa, but bamboo bikes are also better options for green tourism and wonderful experience of tourist who would like to travel riding bicycles.

Boogaali Bikes has also been supporting a charity initiative working with a local non-governmental organization named Goodgaali that uses bikes to deliver foods and other supplements to support newborns and their mothers in local hospitals. Moreover, through the support of INBAR, the company has been working on public awareness events on World Bamboo Days to promote bamboo in general and bamboo bikes in particular.



Capitalize on opportunities: Elgon Naturals Bamboo Cosmetics

Elgon Naturals is a new start-up established by women and produces hair and skin care cosmetics products that are purely made of bamboo extracts and other natural ingredients. It was primarily established to explore the possibility of using bamboo extracts to make cosmetic products based purely on natural ingredients. Bamboo has an active ingredient, mineral silica, which is an element that stimulates hair growth, healthy skin, and strong bones. Final products however include a host of other essential natural ingredients. These essential ingredients are agricultural products that can be farmed by established plantation farms and rural farmers. The company has products for skincare and hair treatment; the products for hair treatment help to eliminate hair problems like hair loss, dandruff, itchy scalp, and balding and enhance skin and hair health. The skincare products help with problems such as acne, eczema, premature aging and skin scar treatment.

products that are friendly to the environment, but products that benefit them directly because of their natural qualities. The inclusion of bamboo around and within cosmetic items caters to this shift while adding an element of intrigue and marketability to the products. Hitherto, there have not been bamboo cosmetics on the market in Uganda, yet bamboo contains natural elements that enhance skin and hair health. Elgon Naturals, therefore, has embarked on a new industrial bamboo product that has the potential to advance the sector in Uganda and the East Africa region in general.

The company was launched in 2016 producing extracts of indigenous bamboo from the slopes of mountain Elgon located on the Uganda-Kenya border, which is the oldest and largest solitary, volcanic mountain in East Africa. It works with rural communities to promote the growing of bamboo and other related essential herbs and plants for purposes of supplying the bamboo cosmetic industry and other bamboo-based industries in Uganda.

The company aspires to establish its bamboo nursery farm for distribution and sale to farmers and seeks to start a bamboo plantation farm, as well as strengthen the bamboo cosmetics production facility for increased product lines and quality improvement. Until the outbreak of COVID-19, the company used to have an annual sales volume of 10 million USX (USD 3000). Currently, the company has 12 handmade, high-quality, organic, and affordable skin and hair care products, including bamboo soaps.

The marketing and finance manager of the company, Carol Tusiime, says that bamboo can save the environment while nurturing skin and hair. Together we can preserve the Elgon region's unique flora and fauna while offering Uganda excellent and affordable products.

Elgon Natural's approach is unique because it has chosen a unique product to rally community participation and industrial development around a common and natural ingredient. Globally, bamboo is being used as both packaging and an ingredient in cosmetic products. The eco-friendly qualities of bamboo are being incorporated in not just the packaging of cosmetic products but the formulation of cosmetic products themselves. This shift comes as consumers don't just seek

INBAR supported Elgon Naturals in the provision of capacity-building training and convening exposure visits to other countries outside Uganda to create increased awareness about the potential of the sector and facilitate networking and business-to-business linkage with similar companies in other parts of the world.



INBAR supported Elgon Naturals in the provision of capacity-building training and convening exposure visits to other countries outside Uganda to create increased awareness about the potential of the sector and facilitate networking and business-to-business linkage with similar companies in other parts of the world.



The marketing and finance manager of the company, Carol Tusiime, explains the company and the support they get from INBAR.

+256 772 961414
nasiogetu@gmail.com



Green Cane has received support from INBAR through training workshops for artisans, farmers, and company management. INBAR has also supported the organization with production tools. To date, INBAR is supporting Green Cane with bamboo seeds for propagation.



A short interview with Herbert Mugisha, founder and owner of Green Cane Innovations, gives information about the background of the company and its efforts to support smallholder bamboo growers in South Western Uganda. Please click on the link above to watch the full video.

Capitalize on opportunities: Green Cane Innovations

Green Cane Innovations is a social entrepreneurship organization based in Kisoro District South Western Uganda, with the novel objective of promoting the bamboo value chain under the tagline Bamboo from Plant to Product. Green Cane Innovations’ distinctive social entrepreneurship model has played a strong role in creating awareness about the benefits of bamboo in Uganda. Since 2000 Green Cane has been providing positive impact-based solutions that directly address social, environmental and conservation issues of Gorilla National Park edge communities of Bwindi and Mgahinga Gorilla National Parks as well as Echuyua Central Forest Reserve. All restricted natural forests possess great resources of bamboo. For centuries these communities freely depended on bamboo from these forests. When the Government of Uganda restricted access to these forests the communities lost out. It is upon this backdrop that Green Cane Innovations is domesticating bamboo on private land.

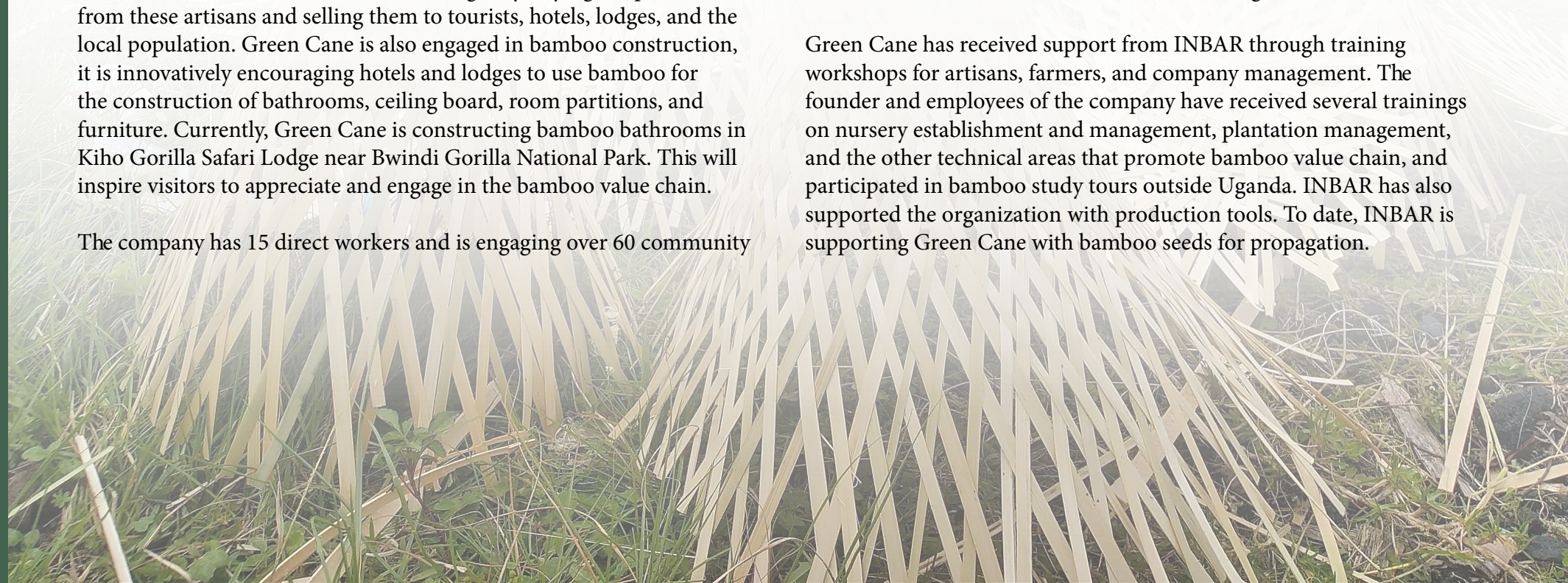
With support from INBAR, Green Cane is engaged in the production of handicrafts and artisanal bamboo products. Community members (45 women and 25 men) were trained in bamboo handicrafts by trainers sourced from Ethiopia and Tanzania. The company is now working with these individuals to produce lampshades, home use baskets, wall decorations, office/guest room wastebaskets, mats, and kitchen utensils. Green Cane creates market linkages by buying the products from these artisans and selling them to tourists, hotels, lodges, and the local population. Green Cane is also engaged in bamboo construction, it is innovatively encouraging hotels and lodges to use bamboo for the construction of bathrooms, ceiling board, room partitions, and furniture. Currently, Green Cane is constructing bamboo bathrooms in Kiho Gorilla Safari Lodge near Bwindi Gorilla National Park. This will inspire visitors to appreciate and engage in the bamboo value chain.

The company has 15 direct workers and is engaging over 60 community

members in bamboo handicrafts. There are 225 bamboo smallholder farmers, under Green Cane’s program. Both farmers and weavers are being organized into a cooperative society. INBAR has been supporting the farmers through hands-on training in sustainable bamboo plantation management both in the first and second phase of the Dutch Sino East African Bamboo Development Programme. Green Cane with support from INBAR and other partners has supported farmers neighboring Echuyua Forest Reserve with 35,000 seedlings. Fifteen thousand were planted along the shores of crater Lakes of Chahafi and Kayumbu in Kisoro District South Western Uganda.

Green Cane has been known in Uganda as a leading trainer of bamboo handicrafts. Green Cane has 10 dedicated bamboo handcraft trainers who have been invited by several organizations to train other community members across Uganda. With support from INBAR Green Cane has established a bamboo nursery that has raised 50,000 seedlings in 2021 out of which 40,000 have been sold out for planting. Green Cane plans to double seedling production through seed multiplication by the end of 2022. The company aspires to invest more into nursery establishments and management to make planting materials affordable to the community. The company also targets to invest in bamboo furniture production. Southwestern Uganda is a tourism hub with high demand for bamboo furniture in hotels and lodges.

Green Cane has received support from INBAR through training workshops for artisans, farmers, and company management. The founder and employees of the company have received several trainings on nursery establishment and management, plantation management, and the other technical areas that promote bamboo value chain, and participated in bamboo study tours outside Uganda. INBAR has also supported the organization with production tools. To date, INBAR is supporting Green Cane with bamboo seeds for propagation.



Lessons Learnt

Capacity building:

Uganda should work on the capacity of its bamboo sector stakeholders to address gaps in the ability of institutions, individuals, industries, and enterprises to produce, manage, process, and scale up the production and utilization of bamboo in the country. As witnessed from previous experiences, there is a dearth of technical and administrative expertise in bamboo resource and value chain development, marketing and distribution. The country should work on technological knowledge, in its various forms, that is applied to grow, harvest, process and sustainably utilize bamboo. Particularly, the private sector should benefit from technology transfer across the value chain to become competent either at the regional or international level.

Domestic market:

One of the challenges of the bamboo sector in Uganda that has remained is the low-level awareness of the local people about bamboo and its products. That has influenced the uptake of the domestic market in the bamboo industry. Uganda should therefore work on awareness of the public about the economic and environmental advantages of bamboo and its utilization. As the bamboo industry of the country can't rely on the export market, developing the domestic market of the sector is a paramount issue for its growth.

Stakeholder engagement:

Well-coordinated and networked multi-stakeholder engagement to regularly come on board and discuss issues and opportunities of the bamboo sector in Uganda has been lacking. Stakeholder engagement is essential as it fosters connections, trust, confidence, and buy-in for the sector's key initiatives either by the government or the private sector. The Uganda bamboo sectoral association should play a leading role in convening, communicating, and networking with stakeholders of the sector, so that collaboration among actors is achieved. This will help bridge the constructive communication that should exist between policymakers and bamboo sector players in the private wing. Stakeholder engagement is critical for an inclusive and participatory bamboo sector growth of the country.

Private sector investment and access to finance:

Uganda's ten-year bamboo sector development strategy and action plan, adopted in 2019, envisages to realize a bamboo industry that is led by the private sector. To this end, private sector investment plays an indispensable role for the development of the bamboo industry, restoration, and environmental protection. The government should work on incentive packages to attract investment in the bamboo sector. Moreover, Uganda bamboo sectoral association, along with other actors, should sensitize financial institutions about the investment potential of the bamboo sector and initiate discussion on potential business collaboration among investors, entrepreneurs, and monetary institutions to encourage private sector investment in the sector.

Increased restoration:

Uganda's ten-year bamboo sector development strategy and action plan, adopted in 2019, envisages restoring 375,000 ha of degraded landscape and identified bamboo as one of the restoration crops for the country. Bamboo is a fast-growing plant recognized for land restoration, climate change mitigation, and environmental management. It is a good resource for agroforestry, homestead farming, and large-scale plantations. One of the lessons drawn from previous interventions is the need for restoring and sustainably managing bamboo resources. Bamboo restoration and sustainable harvesting and management for the sustainable supply of the industry and environmental management should be another area of focus for the time to come.