Green Jobs for Youth in Uganda: Potential, Opportunities, Barriers, and Best Practices

February 2025

CHALLENGE FUND FOR YOUTH EMPLOYMENT

The research for this report was commissioned to Ronald Luwangula, PhD, together with Fred Kasalirwe, MA, MSc. and Tusiime Kenneth, guided by Rikke van der Veen from the INCLUDE Knowledge Platform. Final editing and layout by CFYE. We especially thank Eco Brixs, Woord & Daad Uganda, and Marula Proteen for their active contribution to this research.

Executive Summary

Climate change and youth unemployment are two interrelated global challenges that manifest in many national economies including in Uganda. Transitioning to a green economy offers a critical measure to simultaneously address these challenges. Uganda has demonstrated commitment through a range of laws, policies and strategic frameworks to foster this transition. Ecosystem actors are implementing, at different scales, green growth interventions that address youth unemployment while spurring the country's growth and, at the same time, mitigating the impact of climate change and environmental degradation.

However, there is limited evidence on green jobs for youth in Uganda. This study was commissioned by the Challenge Fund for Youth Employment in an attempt to address a range of knowledge gaps. To do this, the study follows a three-pronged research approach to address the research aim. The report thus presents, first, an **understanding of the potential** for green jobs in green sectors and business models in Uganda, secondly, areas for **improving decent work** for youth in green jobs by addressing key barriers and leveraging opportunities, and thirdly, pathways for policymakers, practitioners and other stakeholders to **enable a just transition** to green jobs for youth in Uganda.

The report presents an adapted framework for understanding green and decent jobs as well as the meaning that youth and other stakeholders in Uganda assign to them. The report further details the context-specific challenges affecting the green sectors of organic and plastic waste recycling, as well as apiculture in Uganda. It also unpacks the sector-specific potential for creation of green jobs for youth, considering the value chain activities involved. Amidst the potential for each of these sectors to create jobs for youth in Uganda, five (5) key barriers are identified that hold back this potential. These are: limited access to green finance; green skills gaps among youth; limited awareness, gender-specific barriers, and job indecency.

The report presents three case studies based on Implementing Partners (IPs) within the Challenge Fund for Youth Employment portfolio that operate in Uganda's organic waste recycling sector, plastic waste recycling sector, or apiculture sector. These include Marula Proteen (organic waste recycling); Eco Brixs (plastic waste recycling); and Woord & Daad (apiculture). The case studies shed light on the strategies deployed by these IPs to address the identified barriers.

Based on the research evidence presented in the report, a set of recommendations targeted at addressing the identified barriers is provided. Finally, the implications for policy and practice are presented.

Structure of the Report

In chapter two of this report, we will dive into understanding green and decent jobs as well as the defining characteristics. Chapters 3, 4, and 5 subsequently present the areas for improving green jobs, shedding light on the three sectors of focus, and presenting the context-specific challenges affecting the green sectors of organic waste recycling, plastic waste recycling, and apiculture in Uganda. The report then unpacks the sector-specific potential for the creation of green jobs for youth, considering the value chain activities involved. This is followed by the identification of five (5) key barriers that hold back the potential for each of the three green sectors to create jobs for youth in Uganda. In chapter 5, the three case studies shed light on the strategies deployed by the three companies/organisations to address the identified barriers and to create green jobs for youth in the three sectors. Finally, chapter 6 relies on the evidence from this research to present recommendations targeted at addressing the identified barriers. The implications for policy and practice are then presented followed by four key messages around green financing, awareness creation, green upskilling, and improving job decency.

Chapter 1: Introduction

According to the 2024 National Population and Housing Census Report,[1] out of the country's total population of 46 million people, 77.8% were below 35 years. Overall unemployment rate for Uganda was estimated at 12.3%, while youth (15-24 years) unemployment stood at 16.7%, with female youth registering higher unemployment (18.7%) than their male counterparts (14.7%). [2] The share of youth (15-24 years) Not in Employment, Education or Training (NEET) was 42.6%. Creating and improving jobs for young people is thus a key priority for Uganda. The National Development Plan (NDP) III underlines the challenge of limited creation of quality and decent jobs in the economy, especially for the youth. At the end of the five-year period for the NDP III (2025), one of the expected results was reduced youth unemployment from 13.3 percent to 9.7 percent.[3]

Uganda's vision 2040 provides the framework for sustainable management of the environment as it aims to leverage strategic opportunities to catalyze higher returns across all sectors of the economy. In addition, the NDP III provides an overarching planning and development framework for green sector actors. These are guided to undertake interventions that potentially contribute to green development, including access to decent employment. Besides, the Uganda Green Growth Development Strategy-UGGDS (2017–2030) provides a framework for achieving decent green jobs through green growth. By 2030, implementation of the UGGDS is projected to create a total of 3,366,016 decent jobs across the five catalytic investment areas (of agriculture, natural capital management, green cities, transport and energy).

[1]https://www.ubos.org/wp-content/uploads/2024/12/National-Population-and-Housing-Census-2024-Final-Report-Volume-1-Main.pdf

[2]National Population and Housing Census Report 2024

[3]National Development Plan III (2020/21 – 2024/25). Available at: https://www.npa.go.ug/wp-content/uploads/2023/03/NDPIII-Finale_Compressed.pdf

Literature available[4] suggests that sectors that contribute to greening the economy offer great opportunities that can be leveraged to mitigate the impacts of climate change and environmental degradation while addressing the challenge of youth unemployment. However, much is still unknown about what constitutes green jobs and job decency in Uganda, the opportunities and potential of the green sectors to create green jobs for youth in Uganda, the challenges and barriers that these sectors face in harnessing such potential, best practices, as well as the pathways to creating green jobs for youth in Uganda.

Under its portfolio in Uganda, the Challenge Fund for Youth Employment (CFYE) has onboarded several companies and entrepreneurial organisations that are active in the green economy in sectors such as plastic waste recycling, organic waste recycling, and apiculture. CFYE has initiated this research to better understand:

How these companies (and the broader green economy) create green jobs for youth?

How can this help minimize youth unemployment and underemployment?

To what extent these jobs are aspirational, decent and meaningful for Uganda youth?

This report will further discuss the challenges and barriers that these sectors face in harnessing the identified potential for youth job creation, and feature three case studies of how CFYE implementing partners Woord & Daad (apiculture), Eco Brixs (plastic waste recycling), and Marula Proteen (organic waste recycling) have

[4]ILO (2019) Skills for green jobs in Uganda, wcms_706954.pdf

addressed these barriers and what best practices can be drawn from their experiences.

The research followed a three-pronged approach, aimed to first **understand the potential** for green jobs in green sectors and business models in Uganda; second, to identify where to **improve decent work** for youth in green jobs by addressing key barriers and leveraging opportunities, and third, to determine how policymakers, practitioners and other stakeholders can **enable a just, green transition** in Uganda through clearly identified pathways.

Chapter 2: Understanding green jobs

This part of the report provides an understanding of what green jobs are, the defining characteristics of green jobs, and the related concepts. The report, however, does not reinvent the wheel in defining green jobs. It adopts the definition provided by The INCLUDE Knowledge Platform and Challenge Fund for Youth Employment (2022) in a paper titled: **Green Jobs for Youth in Africa**.[5] In addition, relevant literature was reviewed to provide an understanding of the related concepts.

Conceptual Framework: The Concepts of Green Economy, Green Transition, and Just Transition

Green Economy: This report adopts the definition by the United Nations Environment Programme (UNEP) which defines a green economy as: "…one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcity."[6] A green economy offers the promise of simultaneously addressing the negative consequences of climate change and creating job opportunities for a growing population of youth in Uganda. As a practical example, the government of Uganda has made efforts towards a green economy in its attempt to phase out the production of plastic packaging products in favour of recyclable and biodegradable paper products (Rupiny, 2022)[7]. Subsequently, the Uganda Investment Authority (UIA) has been

[5] https://fundforyouthemployment.nl/wp-content/uploads/2022/10/Green-Jobs-For-Youth-in-Africa.pdf

[6] UNEP (2010). Green Economy Reports: A Preview, 2010, p. 4-5

[7] https://www.ugandainvest.go.ug/crane-paper-an-exemplar-for-sustainable-green-economy-in-uganda/#:~:text=Crane%20Paper%3A%20An%20exemplar%20for%20sustainable%20green%20economy%20in%20Uganda,-By%20David%20Rupiny&text=One%20of%20Government%20of%20Uganda's,recyclable%20and%20biodegradable%20paper%20products.

promoting investments in paper packaging products to grow a robust and sustainable green sector (Ibid).

Green Transition: This encompasses a "whole range of strategies and actions aimed at reducing environmental impact, mitigating climate change, and promoting sustainable development; and ultimately resulting into a low-carbon, circular economy that operates within the planet's ecological boundaries"[8]. In addition to environmental protection and sustainability, green transition underlines social and economic dimensions. These include driving innovations, creating new job opportunities in green sectors; providing training and support for workers transitioning from traditional ways of production; improving people's quality of life; and ensuring that the benefits of the transition are inclusive and equitably shared[9].

In Uganda, green transition is manifested by the urban authorities in cities and municipalities embracing the development of industrial and urban masterplans, and waste policies and bylaws with the aim to improve people's wellbeing. The authorities are embracing the processing, separation, and/or treatment of solid (organic, plastic and paper) waste, and design value chain solutions that involve extracting recycling value from waste, biogas, organic fertiliser, and green jobs (McLeod, 2024)[10]. Other transitions are seen in areas such as transport (for instance electronic busses and motorcycles) and agriculture (for instance through solar powered irrigation systems).

Just Transition: This concept as used in this report underlines the notion of inclusion of particularly marginalised populations in the due process of green transition. The United Nations Committee for Development Policy (2023) defined a just transition broadly as: "ensuring that no one is left behind or pushed

---

[8]https://mcsolutions.vn/what-is-green-transition-simple-steps-to-a-better-world/#:~:text=For%20example%2C%20when%20countries%20invest,fuels%20and%20lowering%20carbon%20emissions.

[9]Ibidem

[10]McLeod (2024). Supporting Uganda's Green Growth Transition. Available at: https://gggi.org/supporting-ugandas-green-growth-transition/

behind in the transition to low-carbon and environmentally sustainable economies and societies"[11].

Green Jobs: A Conceptual Framework

As per UNEP definition of green jobs adopted by INCLUDE and Challenge Fund for Youth Employment (2022) **green jobs** are "...jobs in green businesses that contribute appreciably to maintaining or restoring environmental quality and avoiding future damage to the Earth's ecosystems, while also generating and supporting the wellbeing of people".

This definition recognises the need for restructuring the world of work in view of the effects of climate change and urbanisation and the threats and opportunities they create for young people. It further underlines the 'greening' of economies as a potential solution to the rising challenges of climate change, poverty, and inequality, and to generate an inclusive economic transformation beneficial to young people.

INCLUDE and Challenge Fund for Youth Employment (2022) citing ILO (2016), remarked that green jobs include jobs that either generate **goods** or provide **services** that benefit the environment, or jobs that contribute to more environmentally friendly **processes**, for example, by improving recycling systems, while also generating and supporting the **wellbeing** of people.

According to van der Ree (2019)[12], these represent the two perspectives through which green jobs can be viewed: as final output or production processes. Van der Ree (2019) echoes that from the production process perspective, "green jobs do not necessarily produce 100 per cent environmentally friendly final goods or services". They are green to the extent that they either generate **goods** or

[11]UN Committee for Development Policy (2023). Just transition: CDP input on the 2023 ECOSOC theme (Accelerating the recovery from the coronavirus disease (COVID-19) and the full implementation of the 2030 Agenda for Sustainable Development at all levels)

[12]van der Ree, K. (2019). Promoting Green Jobs: Decent Work in the Transition to Low-carbon, Green Economies. Available at: https://journals.openedition.org/poldev/3107

provide **services** that benefit the environment, or jobs that contribute to more environmentally friendly **processes,** but not necessarily both.

Job Decency

According to INCLUDE and Challenge Fund For Youth Employment (2022), as a minimum, decent jobs "must encompass opportunities for women and men to obtain productive work in conditions of freedom, equity, security, and human dignity, and in which women and men have access on equal terms" and "must be structured in line with ILO's four pillars of decent work – employment creation, social protection, rights at work, and social dialogue". Relatedly, van der Ree (2019) contends that decent jobs ensure that working practices are safe, healthy, and pose no danger or significant damage to human health that workers are protected (through social protection measures) from precarious employment conditions and workers' earnings are reasonable. The Challenge Fund for Youth Employment (2023b) provides that a job is considered green and decent if it: a) contributes substantially to protecting or restoring ecosystems and biodiversity; b) reduces resource consumption and inefficiency; c) de-carbonizes the economy; d) minimises or altogether eliminates all forms of waste and pollution; and e) encourages and supports people's well-being.

The following figure adopted from the Green Jobs for Youth in Africa Research Paper (INCLUDE and Challenge Fund for Youth Employment, 2022) visualises the main characteristics of green jobs.

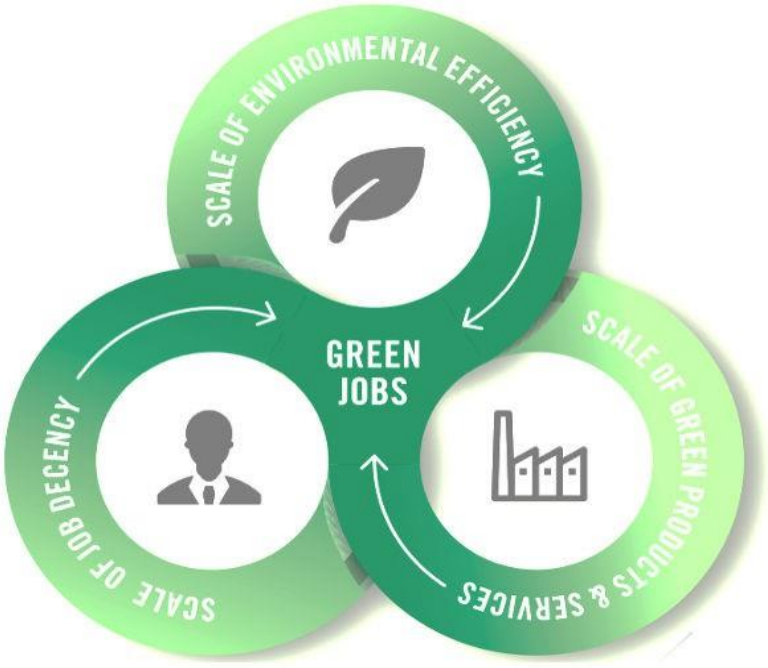


Figure 1: Characteristics of Green Jobs

Youth involved in the research leading to this report identified various contextual parameters for job decency, including:

- The job giving the youth the opportunity to be their own entrepreneurs (self-employment).
- Certainty in terms of return on investment (for the case of youth entrepreneurs).
- Assured income and therefore more financial independence
- Job satisfaction (associated with youth liking what they do, giving them room for saving income to facilitate the realization of life goals).
- Posing minimal or no work pressure.
- Work safety (workers provided with personal protective equipment (PPEs) and inputs).

Ideally, they also see more "formalised" employment benefits such as social protection schemes including National Social Security Fund (NSSF) and medical insurance, as much as it also became clear that for now this is only something that is accessible to (some of) the formally employed youth that were part of this research. In that sense, context matters in defining job decency. Engagements with research participants revealed that in the wake of high unemployment rates

and lower income levels in Uganda, the youth reported that they found their jobs in the green sectors in focus for this research (apiculture, plastic waste and organic waste recycling) to be satisfying, though in relative terms. Even when the income earned was not a lot considering the amount of work involved particularly in collecting, sorting and transporting plastic waste, their satisfaction came from their reflection on what their situation would look like without the opportunity that these green sectors offer.

Chapter 3: Creating and Improving Green Jobs

This section identifies areas for creating and improving decent work for youth in green jobs within the three sectors of organic waste recycling, plastic waste recycling, and apiculture, following the three cases studies undertaken as part of this research. For each of these sectors, the specific challenges and the potential to create green job opportunities for the youth in Uganda are identified. The report goes on to unpack the barriers that hold back the potential of these sectors to create green jobs before diving into cases studies of Marula Proteen, Eco Brixs, and Woord & Daad.

The Three Sectors of Focus: Organic Waste Recycling, Plastic Waste Recycling, and Apiculture

Along with digital jobs, creating, matching and improving **green** jobs for youth is one of the main priorities of the CFYE. In other words, for CFYE, organic waste recycling, plastic waste recycling, and apiculture sectors are some of the most potential sectors for the growth of employment opportunities for young people within the green sector of its project countries.

The main reasons why these three sectors are prioritised from a green jobs point of view are the following:

- The three sectors hold significant potential of greening of the economy as they offer potential solutions to the rising challenges of climate change, poverty, and inequality while generating an inclusive economic transformation beneficial to young people.
- In the wake of climate change, the livelihood activities youth are involved in such as crop growing and livestock rearing are increasingly vulnerable to climatic shocks and thus insecure and unreliable. Plastic waste recycling, organic waste recycling and apiculture offer suitable alternatives and/or additional income generating activities.

- Organic waste and plastic waste are among the main contributors to Uganda's GHG emissions.[13] Thus, recycling these two forms of waste is a key priority to address this environmental concern.
- Environmental degradation (e.g. in the form of poor waste management) disrupts infrastructure, supply chains, and overall business activities. Recycling not only contributes to the restoration of the degraded environment but also to smoothening supply chains.
- These sectors provide new and innovative approaches and business opportunities. The employment created by these sectors requires new and innovative skills (think of designing new approaches to organic waste processing) that are attractive to youth.

Organic Waste

The Challenge of Organic Waste

Marula Proteen Ltd is an organic waste recycling company that employs youth along the value chain to recycle organic waste into feed and fertilisers using insect technology (black soldier fly). The company sources the organic waste from food markets and hotels in Kampala. Marula Proteen interventions contribute to addressing the organic waste challenge in Uganda.

[13] https://www.ugandaeuropebusinessforum.com/profiles/services/marula-proteen-uganda-limited/

Organic waste stands out as the leading waste stream generated across all urban authorities in Uganda (GIZ, 2023; Ministry of Water and Environment, 2022). In urban areas, urban solid waste (mainly organic i.e., green and food waste) accounts for 72% (Ministry of Water and Environment, 2022). Kampala city alone collects around 28,000 tons of organic waste per month, which accounts for only 40% of the city's total waste generation (Strategy for Organic Waste Management Uganda, 2024, citing Mugambe et al., 2022)[14]. GIZ (2023) observed that out of the 2,000 to 2,500 tons of waste generated in Kampala per day, an average of 1,300 to 1,500 tons (50%) is collected and disposed per day. There are concerns about the rest of the waste that ends up in waste dumpsites in all the five divisions of Kampala and Greater Kampala Metropolitan area (Ibid). Other concerns relate to the lack of separation of waste at both source and final disposal which compromises the waste management endeavours.[15]

The Potential for Job Opportunities in Organic Waste Recycling

Through desk research and interviews, this research unveiled several value chain activities in the organic waste recycling sector that have untapped potential to create jobs for youth, including:

- Waste picking and collection (jobs created for waste pickers and collectors from restaurants, markets, municipal/city landfills and processing companies).
- Transporting waste to a sorting station and/or recycling plant (jobs created for truck drivers, loaders, etc).
- Sorting organic waste (jobs created for waste sorters).
- Processing organic waste into (semi-) finished products such as fertilisers or animal feed (jobs created for production staff and production manager).
- Packaging, storage and delivery of products (jobs created for packaging staff, storage staff).

[14] https://www.researchgate.net/publication/363309683_Drivers_of_Solid_Waste_Segregation_and_Recycling_in_Kampala_Slums_Uganda_A_Qualitative_Exploration_Using_the_Behavior_Centered_Design_Model

[15] Uganda launches its first ever Green Growth Report - NatuReS

- Sales of these (semi-) finished products (jobs created for sales staff).
- Jobs created through other processes in running companies in the recycling sector such as Human Resources (HR), finance or other (back-office) jobs.

The organic waste recycling sector has a great potential for creation of jobs, but national level data on the number of jobs created by this sector is hardly available. Some of the accessible data are project based and focus mainly on the Greater Kampala Metropolitan Area. For example, according to a press statement by Kampala Capital City Authority (KCCA) in 2018, the new organic and plastic waste recycling plant that was opened that year, was expected to create jobs for over 1500 people along the entire chain on top of improving environmental management.[16] Similarly, at the time of unveiling the Marula Proteen organic waste recycling plant in Kampala, Kampala Capital City Authority envisaged the plant to create jobs for over 1500 people along the different chain activities.[17]

[16] https://www.kcca.go.ug/uDocs/WASTE%20RECYCLING%20PRESS%20STATEMENT.pdf

[17] https://www.watchdoguganda.com/news/20181028/52714/kcca-unveils-new-waste-recycling-plant-to-create-1500-jobs.html

Plastic Waste

The Challenge of Plastic Waste

Eco Brixs, based in Masaka and active across Southern Uganda, began operations in 2017, with a community-driven approach to tackle plastic waste. It recycles plastic waste, Polyethylene Terephthalate (PET) and High-Density Polyethylene (HDPE), while creating jobs and income opportunities for local people including marginalised populations like women, youth, persons with disability and people living in poverty.

Uganda generates 600 metric tons of plastic waste daily (GIZ, 2023; NatuReS, 2022). Out of this volume, only 6% is collected (GIZ, 2023). The growing population, urbanisation, industrialisation, and technology advancements have not only contributed to the growth in waste generated but also to a change in the composition of waste, with the organic waste contribution declining, while plastic and paper waste increasing (Ministry of Water and Environment, 2022 citing NPA 2017). In urban areas, plastics waste accounts for 12.4% of total waste generated (Ministry of Water and Environment, 2022). NEMA (2024)[18] documents that 42% of the total plastic waste are improperly disposed. NatuReS documented that the large volumes of plastic waste generated in Kampala were being handled by just over 30 registered recycling companies, working on a very small scale due to technical and resource constraints. While this situation

[18]NEMA (2024). National Strategy for Management of Plastic Pollution (2023-2028). Available at: https://www.nema.go.ug/new_site/wp-content/uploads/2024/05/Plastic_circularity_-Report-2023-1.pdf

demonstrates a large potential for further recycling and opportunities for recycling start-ups to thrive, such opportunities are far from being harnessed.[19]

The Potential of Plastic Waste Recycling to Create Green Jobs in Uganda

In the plastic waste recycling sector, the following activities create potential jobs for youth:

- Waste picking (jobs created for mainly informal waste pickers).
- Sorting and bailing (jobs for sorters of plastic by density and colour).
- Aggregating and storing (jobs for youth running (franchised) community-based aggregation points for recycling companies).
- Transportation to the recycling plant (jobs for truck owners, drivers, loaders and off-loaders).
- Selling plastic waste to the hubs for onward conveyance for processing
- Production and post-production activities for PET plastic:
    - Production – shredding plastic waste into flakes.
    - Packaging and storage of flakes (jobs created for packaging staff/team, storage staff).
    - Selling of flakes (jobs for sales staff).
- Production and post-production activities for the HDPE plastic:
    - Shredding HDPE plastic.
    - Melting down HDPE plastic to create a refined polymer.
    - Remolding the melted plastic into new eco-products (jobs for the team employed in the workshop).
    - Selling of eco-products (jobs for sales team).
- Other jobs for youth in the back-office of recycling companies, such as HR, admin, finance, product design, etc.

Data on the number of jobs created by the plastic waste recycling sector in Uganda is however largely unavailable. The limited data that is available is specific to individual companies. For instance, Eco Brixs has so far created 4,615

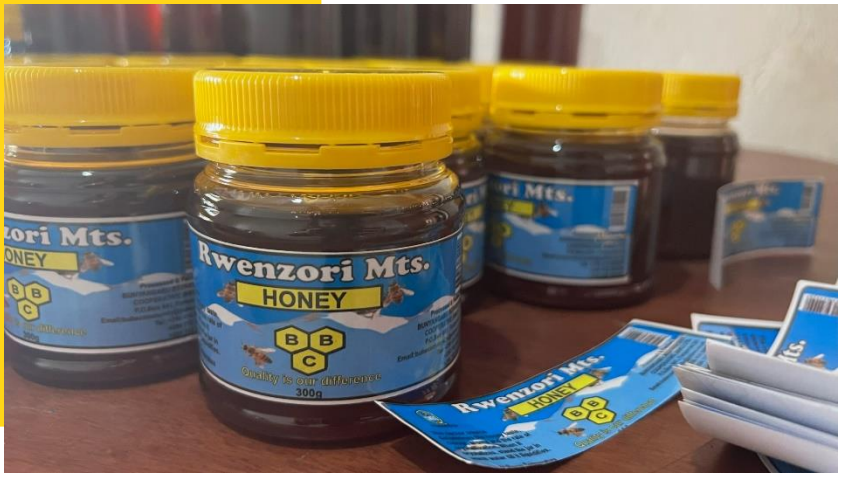
[19]Natural Resources Stewardship Programme (2022). Launch of Innovation Hub for transformative plastic waste recycling and job creation in Uganda. Available at: https://nature-stewardship.org/countries/launch-of-innovation-hub-for-transformative-plastic-waste-recycling-and-job-creation-in-uganda/

jobs through plastic waste recycling.[20] These include the 1,131 jobs created with support of the CFYE.

Apiculture

The Challenges facing the Apiculture Sector

The NGO Woord & Daad works with The Ugandan National Apiculture Development Organization (TUNADO) - a membership apex body that coordinates the apiculture sector in Uganda on promoting and professionalising beekeeping through its Rural Transformation Centres-RTCs and apiary masters, who sensitise communities about beekeeping as a business, mobilize youth to join beekeeping, and offer the necessary skilling relevant to beekeeping and honey production. The RTCs offer market for comb honey produced by the beekeepers.



The apiculture sector is characterised by a widespread adoption (around 1 million Ugandans are – indirectly - involved in beekeeping) but a rather low productivity. Exact production numbers are difficult to establish, which is confirmed by The Uganda National Apiculture Development Organisation (TUNADO)[21] but based on data from neighbouring countries (like Kenya) it is fair to assume less than 20% of the actual production potential is materialised and production mostly

[20] https://www.ecobrixs.org/

[21] https://issuu.com/beesfd/docs/128_bfdj_sep2018/s/12837034

relies on traditional methods of beekeeping.[22] The challenges faced by this sector include the lack of necessary assets (inputs) and specialised skills required of youth that desire to enter beekeeping. Some of the inputs include protective gears, improved hives, smokers, backets, and other equipment (Biryomumaisho et al., 2022).[23] Shortage of technical knowledge and skills amidst the absence of readily available extension services undermines youth participation in beekeeping. Human activities and practices to cope with climate change have a direct impact on apiary. Some of these include use of herbicides and pesticides and the planting of fast maturing crops to catch the short rainy seasons. At the same time, decreasing bee populations have a negative effect on overall productivity in the agriculture sector due to decreased pollination.

The Potential of Apiculture to Create Green Jobs in Uganda

- Through desk research and interviews, this research unveiled several value chain activities in the organic waste recycling sector that have untapped potential to create jobs for youth, including:
- Beekeeping itself (farming jobs).
- Production of necessary equipment including bee suits, smokers, beehives etc. (produced by local artisans).
- Training beekeepers in basic apiary practices (jobs created for apiary masters).
- Bulking and aggregating honey.
- Transportation of honey to aggregating centers and processing points in Kampala and other urban centres.
- Processing, packaging and branding.
- Sales (retailing/wholesaling) of honey and honey products.

[22] http://apicultureplatformkenya.com/facts-related-to-apiculture/

[23] Biryomumaisho, D., Onen, J., and Swinkels, C. (2022). Blog: Flight paths of the beekeeping sector in Uganda. Published on 26 January 2022. Available at: https://includeplatform.net/blog/flight-paths-of-the-beekeeping-sector-in-uganda/

As mentioned, many Ugandans are directly or indirectly involved in beekeeping but for most of them this is mostly a side activity rather than a full-time job. Exact statistics on the employment impact of the beekeeping sector in Uganda are unknown. Within the CFYE portfolio, Woord en Daad created 1,149 jobs and improved 551 jobs.

Chapter 4: Barriers holding back the potential of the three green sectors to create jobs for young people

This section of the report presents five key barriers that were identified through the research, that hold back the potential of the green economy in general and its ability to create jobs for young people at scale in particular. These barriers include limited access to green finance; green skills gaps among youth; limited awareness, gender-specific barriers, and perceived job indecency.

Lack of Access to Finance

Meaningful participation of youth in the green sector as entrepreneurs or employees is hampered by access to finance, needed to engage as entrepreneurs or as employees within the value chains of the different sectors. The study revealed that within the organic waste sector, youth need finances to establish greenhouses, acquire necessary equipment, transport organic waste to the recycling facility, etc. In plastic waste recycling, entrepreneurs that run mini-franchises need financial resources to pay rent, buy plastic waste from the pickers, as well as transport the plastic waste to the recycling plants. Interview data indicates that, depending on the location of the store, monthly rent charges range between UGX 150,000 to UGX 250,000 (approx. USD 41.1 to 68.5). Moreover, the landlords demand an initial upfront payment covering the first 3 months. The entrepreneurs also reported that their businesses averagely require start-up capital of UGX 1,000,000 (approx. USD 274) to buy 2 tons of plastic waste from the waste collectors.

The youth involved in picking, sorting and supplying plastic waste need finance for the transportation of the low-value yet voluminous plastic waste to the franchise or recycling plant. Beekeepers need protective gears, improved hives, smokers, backets, etc. Price data accessed from World of Bees[24] indicates that protective clothing costs around $50- $60 USD with the cost for one hive being around $40 USD. While these initial investments may appear small, for young entrants to this market it is often not.

[24] https://worldofbees.shop/en/product-category/tools-and-equipment/page/2/

According to the staff of the three CFYE IPs and staff of other organisations/companies consulted, access to finance from formal financial service providers remains a tall order. Some of them do not understand the green sector, they are more accustomed to borrowers from "conventional sectors". The lenders are often very interested in the borrower's income source, cash flow, and thus assessed ability to repay the loan. This in part forms the basis for qualifying the borrowers as credit worthy or not. Formal financial service providers barely consider most youth entrepreneurs as credit worthy and their demand is often too small compared to the high cost for lending. This implies that as long as the youth do not have personal means to raise the funds needed to start or run their enterprises, they remain financially excluded as some study participants noted.

> Access to finance is a big challenge. You know bee keeping specifically is a sector which is not widely recognised by financial institutions. So, if I go to the bank and say, I am a beekeeper and I am seeking for a loan, I think the bank would say, well, what do you mean, and they would ask you so many questions
>
> ***(Key informant-Woord & Daad).***

Context-specific literature confirms these challenges. According to Fischer (2024)[25], Uganda's banking sector lacks a good understanding of the business models implemented by green small and medium enterprises (SMEs). The financial services providers' appraisal processes and criteria are not only rigid but also sometimes incompatible with the business models of the green SMEs. Financial institutions may find it challenging to assess the viability and profitability of projects implementing green business models.

[25]F. (2024). UGEFA Impact Assessment 2024: Greening the Ugandan Finance Ecosystem through SME Investments. Berlin: adelphi research gGmbH. Available at: https://agefa.eu/wp-content/uploads/2024/11/UGEFA-Impact-Report-2024.pdf

Skills Gap

One of the key findings of this study is that many young people that would ideally find jobs (as entrepreneurs or employees or suppliers) do not have the right skills to participate in green jobs. One of the reasons is that the education system is lacking up-to-date curricula that is intentional about equipping the youth with these skills. Besides, there is no system in place for the identification of future skills needs for particularly green jobs in the labour market (ILO, 2018).

Jobs in the different green sectors call for different skills. According to (Biryomumaisho et al., 2022), youth involved in beekeeping need knowledge and skills in apiary management. They need to know when and how to harvest, how and when to use equipment and inputs such as a protective suit and knowing when to replace a beehive hives (Ibid). Similarly, the different phases in the organic waste recycling value chain require a set of skills. The ILO (2018) recommends that as a means to greening the economy, the participants in waste collection need skills in separating organic waste so that it can be used for composting, among other things; skills in other innovative uses of organic waste; and generally, skills in waste collection through to recycling. These skills are not readily available among many youths interested in taking up such enterprises. The country's TVET (technical and vocational education and training) institutions are yet to prioritise provision of green skills training for new green occupations and for greening established jobs/ occupations.

Limited Awareness

This study revealed limited awareness about the potential job opportunities created through the activities in the value chains of organic waste recycling, plastic waste recycling and apiculture. For many members of the public, they are yet to appreciate and approach organic and plastic waste as resources. Some youth despise the job opportunities created by the organic and plastic waste recycling sectors not necessarily because the jobs are not rewarding but due to limited awareness of the potential of these jobs to impact their lives and make a proper income.

> I used to undermine this job, and I would regard the people doing it as hopeless. For me to join this kind of work, it took a lot of convincing from my sister who works here (at Eco Brixs). She really struggled to assure me about the profitability of this activity of collecting plastic. But when I softened my stand and started collecting plastic waste, I have not looked back.
>
> ***(FGD with Youth at Eco Brixs).***

Job Decency

According to the youth involved in picking and sorting plastic waste supplied to Eco Brixs, the perception by fellow youth and other community members of these youth as thieves, insane, and dirty, poses a safety risk. The affected youth reported that in some instances, some people have attempted to beat them since they are misunderstood to be thieves that go around picking people's valuable items under the guise of picking plastic waste. The female youth waste pickers that were interviewed reported that society stigmatises them with sentiments that they will not find men for marriage. The indecency of the plastic waste picking jobs is exacerbated by the sites where the plastic waste is collected and the hours of the night during which they are collected.

In the organic waste recycling sector, the organic waste used by Marula Proteen and other enterprises to produce organic fertilisers and animal feeds is detested by some youth for the bad smell it emits. According to some staff of Marula Proteen, some youth become reluctant to uptake the job opportunities that the organic waste recycling sector offers, especially at the lower level of the value chain.

Gender Barriers

The nature of work across the three sectors was found to present gender-specific barriers for female youth's participation. In apiculture, traditionally, harvesting honey is perceived to be a night activity that involves climbing trees to access the beehives. This is perceived to be a risk to women's safety, and it discourages some men from allowing their spouses, daughters or sisters to venture into beekeeping, considering it as a taboo (Biryomumaisho et al., 2022). With plastic waste recycling, gender-related barriers impede some female youth's participation in picking and supplying plastics. The dominant sources of plastic waste are bars, hotels, night clubs, and events venues. Due to the high demand for plastic waste, it is largely picked at night. In addition, the activity involves carrying big, bulky sacks of plastic waste. Women are more embraced in sorting compared to picking; the former offers fewer job opportunities than the latter. In the organic waste recycling sector, most of the activities involve heavy manual labour, for instance in picking, loading trucks, transportation, and work in the production process.

Generally, female youth thrive more in value chain activities around sales and marketing of final products (for instance organic fertilizers and animal feeds) or formal employment in technical operations or administration at the companies'

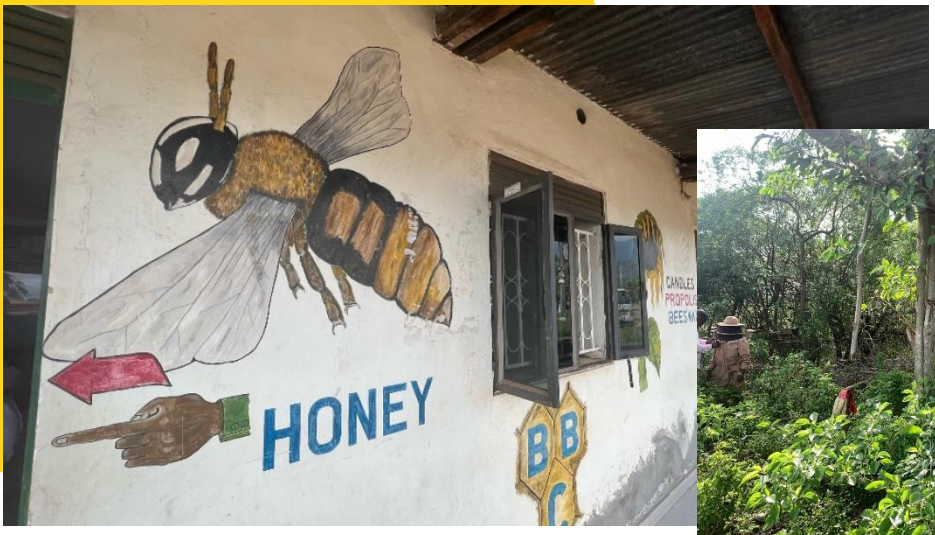
offices or factories. However, these opportunities are fewer in practice. On another note, gender dynamics also complicate access to credit (mostly input loans) for youth. Young women face more barriers than young men because of unequal access to and control over resources, unequal power relations, and unequal decision making at a spousal level.

> Within our project, it was hard for the ladies compared to the men to access (input) loans. Why? Because, you know, when you have to pick a loan, especially the ones who are married and indeed our target group being 18 to 35, many were married, you need to get the consent from the husband. And sometimes they (the spouses) are going to say, how can you get a loan? So that was also very challenging. Yet, for the male youth, they did not get to be interrogated that much. I don't think anyone was interested in knowing whether their spouses (wives) had consented.
>
> ***(Key informant – Woord en Daad)***

Chapter 5: Case studies

This study was largely based on three case studies, examining implementing partners (IPs) within the Challenge Fund for Youth Employment portfolio in Uganda's organic, plastic waste recycling, and apiculture sectors. These are Marula Proteen (organic waste recycling), Eco Brixs (plastic waste recycling) and Woord & Daad (apiculture). The case studies are built up based on interviews with staff of each of the companies/organisations and the youth involved in their companies and activities. The case studies facilitated the identification of strategies deployed by each of them to address the identified barriers and to create green jobs for youth. For each of the case studies, we describe how the IP worked out specific pathways to address the key barriers identified in the previous section of the report.

Case Study 1: Woord & Daad



Woord & Daad, a non-profit organisation based in Kampala and operating across different regions of Uganda, is involved in promoting youth employment through 'beekeeping-as-a-business'. The IP works with the Ugandan National Apiculture Development Organization (TUNADO), which is a membership apex body.

TUNADO unites producers (beekeepers), processors, packers, service providers (trainers, research, marketers, and equipment manufacturers) and other stakeholders towards apiculture development in Uganda[26]. At the practical level, TUNADO has grass-root structures, allowing for direct youth engagement. TUNADO's structures (the Rural Transformation Centres-RTCs) offer a market for comb honey produced by the beekeepers. The RTCs buy, aggregate, bulk and transport comb honey to their processing facilities.

Woord & Daad's approach is tailored towards addressing youth unemployment, paying specific attention to gender inclusion. The IP recognises that despite the opportunities that the apiculture sector presents to the youth, a myriad of challenges stands between the youth and benefitting from the green jobs and income opportunities offered by the sector. Cognisant of the challenges and barriers to the sector's realization of its potential to create job opportunities for youth in Uganda, Woord & Daad has deployed innovative strategies to address these.

Awareness Creation and Changing Youth's Perception of Beekeeping as a Business

Woord & Daad, working through TUNADO's Rural Transformation Centres and apiary masters (master trainers for beekeepers), mobilizes and sensitises youth towards appreciating beekeeping as a business. This way, a mind-set shift from being subsistence beekeepers to commercial honey producers is ensured. They come to realise that beekeeping is not only a potentially promising business for youth, but that it is also accessible and requires relatively limited start-up investments. The return on investment is relatively high in the sense that besides the cost of inputs that is incurred at the beginning, for the subsequent seasons, little additional input costs may be required. Secondly, the seasonal nature of honey production assures the youth of seasonal income. In Uganda, there are two seasons in a year. As beekeeping is a relatively low-intensity business activity, the work of beekeeping can easily be combined with other income-

[26] https://tunadobees.org/

generating activities, which allow the youth flexibility and a diversity of income streams.

Access to Green Finance

Particularly for youth entering the beekeeping sector, inputs can be costly and thus present a key barrier to their entry into the sector. Beekeepers need protective gears (suit), (improved) hives, smokers, buckets, etc. Woord & Daad has set up a (revolving) input loan facility to support youth in acquiring these inputs. The input loans are provided through TUNADO's RTC structure and apiary master's to identify the input needs of the beekeepers. The beekeepers are then provided with the input needed on credit to be repaid in a period of up to two years. Youth are not provided with the cash but with the input needed for the production process. Also, beekeepers are offered the possibility to repay the outstanding loans with comb honey rather than only through cash repayments, which allows for a flexible arrangement. Through trial and error, Woord & Daad slowly but steadily manages to set-up a self-sustaining and revolving fund to this end.

Skills Gaps

The apiary masters (employees of TUNADO) constitute a community-based structure that offers targeted training to youth involved in beekeeping. They train starting beekeepers on the agronomic and technical side of beekeeping, such as colony management, pest prevention etc. but also on the business side of beekeeping, such as financial management, marketing and the business case for beekeeping. The trainings take an outreach approach, and they are hands-on. Demonstrations and trainings are done at one of the existing beekeeping sites, rather than being classroom-based. As the RTC's strongly depend on a steady supply of honey for processing, it is also in their interest that new beekeepers are properly trained and increase their production. The training in this way creates a win-win scenario for both TUNADO as well as the youth beekeepers. The training so far is paying off, in the sense that several youth beekeepers have demonstrated significant improvements in productivity, with some youth reporting an increase in harvesting comb honey from 150 kilograms to 350 kilograms per season.

Gender-Specific Barriers

The Gender Action Learning Strategy (GALS)[27] is one of the key strategies deployed by Woord & Daad and TUNADO to help overcome the barriers to young women's participation in beekeeping as a business. The methodology involves engaging the husband and the wife to recognize and appreciate the beekeeping enterprise as a household enterprise rather than viewing it as a business of the wife or the husband. According to key informants at Woord & Daad and TUNADO, GALS aids in mobilising spousal support including consenting to the input loan applied for by the wife. One key informant explained the potential of GALS as follows:

> GALS helps families to work together for the good of their households. It is a training that we give to the couple for five days. They are supposed to come up with a vision, a plan with goals to achieve. This made men know that if their wife would get a loan, she would get it for the good of the family, with earnings from beekeeping coming in for the family. It took us a bit of time to convince men to accept that.
>
> ***(Key Informant-Woord & Daad).***

Access to modern equipment and protective gears constituted another strategy for addressing gender barriers. Woord & Daad has supported youth to access protective gears for safe and effective harvesting of honey, making the sector more appealing to women. The introduction of modern beehives, even though more expensive, made beekeeping more accessible to women as it minimises the negative implications of traditional beekeeping practices, where women would have to go into the forest and climb trees. With the modern hives, bees can be kept on a relatively small piece of land (a paddock) where stands are created, and the hives are mounted on the stands. Finally, role models were also used to

[27] Gender Action Learning System - GAMEChange Network

attract young women to beekeeping. For some of them, it took the intervention of role models to appreciate that beekeeping is a sector for women too.

> Within TUNADO, even though a minority, there were several women already involved in beekeeping through earlier projects. We used them as role models and organised various talk shows and physical community engagements (mobilization drives) where the role models explained the importance of beekeeping, its benefits including guaranteeing regular income, financial independence; and the fact that it is does not demand full-time presence.
>
> ***(Key Informant – Woord & Daad).***

Job Decency

Woord & Daad has enhanced the decency of jobs in the apiary sector by increasing safety features. For instance, through the input credit, the youth were supported to access protective gears (suits) for safe management of colonies and safe harvesting of honey. In addition, the smokers facilitate effective and safe harvesting of honey. The promotion of the paddock system enhances the safety of women compared to if they had to engage in apiculture using the traditional methods. Overall, the shift from traditional beekeeping practices to more improved practices has served to foster the decency of jobs for young people in this sector.

Benefits Gained by Young People

A total of 1,144 youths benefitted from the jobs created by Woord & Daad with the support of CFYE, and another 540-youth benefitted from the improvement in their existing jobs. Feedback from youth involved in the project, substantiated by key informants, pointed to a range of benefits that accrued from the jobs. Overall, the project helped the youth to get access to markets, particularly for comb honey, have a regular yet seasonal income, diversify their incomes and improve their financial independence, improved gender relations, buy land and other assets and create employment for other youth.

I am a beekeeper aged 23 years, married and blessed with one child. I was inspired to start beekeeping by my elder brother. His life and that of his family had changed significantly ever since he joined bee keeping. So, I joined beekeeping as a business in 2019. Currently I have about 50 colonised hives. I harvest between 150 to 200 kilograms of comb honey per season, sold at averagely UGX 8,000 (approximately USD 2.19) per kilogram. I have since bought one half-acre piece of land, planted coffee and I harbour plans of buying more land and build a permanent house

(Interview with a Beekeeper).

For some youth, the income derived from beekeeping and selling comb honey to RTC enabled them to start a family.

From selling comb honey, I was able to buy a heifer. This gave birth and they became two cows. When I wanted to marry my partner, her parents asked me for three cows (as dowry), but my people (family members/elders) negotiated that we could afford two. The two cows I had were the ones I used to marry my wife.

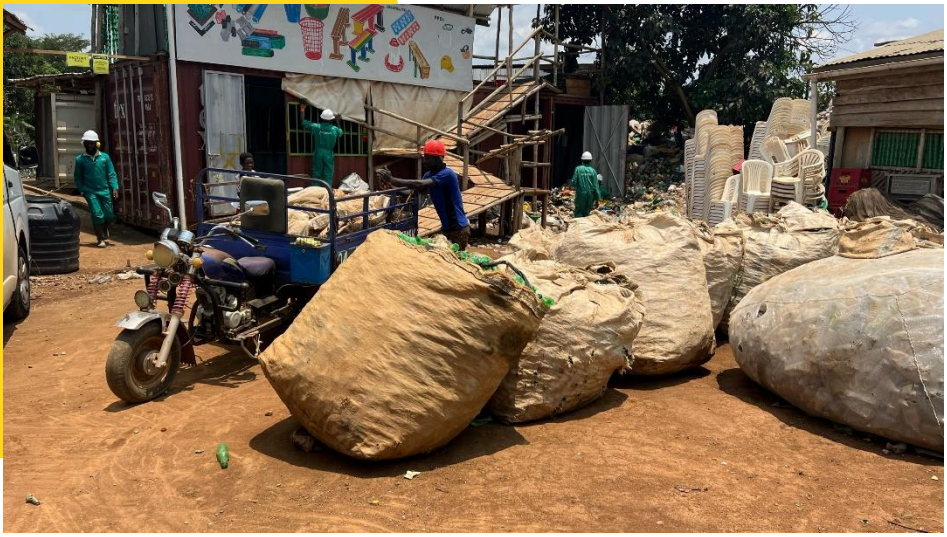
(Beekeeper in Mubende).

And some youths have gained benefits from the complementarity of beekeepers and coffee growing.

> ...we have heard testimonies of people who have increased their coffee yields out of the pollination role of bees. Farmers have testified that now that they have an apiary near their coffee gardens, they are getting better coffee yield. Similarly, the amount of honey harvested increases because of the nutrients they get from coffee flowers
>
> **(Key Informant – Woord & Daad).**

Finally, it's worth noting that Woord & Daad and TUNADO also have an additional developmental impact with their project by targeting refugees, for instance in the Kyaka refugee settlement. TUNADO mobilises refugee youth and host community youth to embrace beekeeping as a business. As the government of Uganda's policy underlines self-reliance for refugees, beekeeping offers a critical lifeline, co-facilitated by host communities who provide these youth with access to land to establish paddocks.

Case Study 2: Eco Brixs



Eco Brixs is based in Uganda, more specifically in Masaka, with the latest expansion of its circular model across Southern Uganda to districts such as Mbarara, Fort Portal and Kalangala. Since 2017, the company has used a community-driven approach to tackle plastic waste. It uses a circular model to recycle plastic waste (PET and HDPE) while creating jobs and income opportunities for local communities including vulnerable groups of women, youth, persons with disability and people living in poverty.

Eco Brixs works with individual Resource Recovery Agents that collect plastic waste and deliver it to the company's recycling plant. The individuals are paid for each kilogram of plastic they bring to the purpose-built Eco Brixs recycling site in Masaka, or one of its 44 Community Buy Back Centres scattered across the district[28]. By buying back plastic from the community members, jobs for

[28]Eco Brixs (2023). Impact Report: September 2023. Available at: https://mcusercontent.com/f8dc451b92bb0e74d331bbfc8/files/9284c54f-a32f-97d6-ad22-33c06c147b77/Eco_Brixs_Impact_Report_September_2023_6th_Birthday_V2.pdf

waste pickers, sorters, transporters and others are created in the process. The plastic waste is recycled into a range of new products including bricks, pavers, furniture, eco benches, eco tiles, fence posts, lumber and much more[29]. The eco-products are more environmentally friendly and lighter compared to the timber and concrete products. These products are sold on the open market, and the proceeds/revenues are used to buy further plastic waste from the community and so, the cycle continues. Eco Brixs intentionally employs young people (with low levels of education) and women. The women comprise approximately 50% of the company's waste pickers, and sorters (CFYE, 2023)[30].

Strategies Adopted to Address the Identified Challenges

Awareness Creation on Job Opportunities

Eco Brixs has addressed the challenge of low awareness by providing the youth and community members with information (sensitization) that picking/collecting plastic waste requires almost nothing in terms of capital to start. Being aware of the fact that young people involved in waste picking face harsh treatment from their communities, characterised by negative stereotypes and attitude, Eco Brixs has made several drives in and around the community to make people aware of the importance of plastic collection. In addition, radio talk shows have been conducted to reach the wider community about plastic collection, its importance and the environmental and economic benefits. Eco Brixs has also been intentional about addressing the negative attitude among youth towards the jobs created by the plastic recycling sector through continuous sensitisation about the benefits that the sector offers including income, livelihood and survival, environmental protection; and the fact that earnings are instant.

Addressing Access to Finance Challenges

For young people with a passion to become entrepreneurs as franchisees of buy-back centers, Eco Brixs starts by attracting them to become waste pickers and they are then supported to save their earnings with Eco Brixs to the point where

[29] https://www.ecobrixs.org/eco-products

[30] CFYE (2023). Selection Uganda: Eco Brixs and Taka Taka Solutions. Available at: https://fundforyouthemployment.nl/uganda-selection-eco-brixs-taka-taka-solutions/

it is sufficient to set up their own small enterprise. The company thus offers the youth a growth path. Youth that start as pickers of plastic waste graduate into community-based buyers (entrepreneurs) that sells in bulk to Eco Brixs. For some of the youth entrepreneurs, Eco Brixs provides weighing scales on credit and in selected cases supports them to rent a space, buy the plastic waste, and employ fellow youth. Eco Brixs also provides training on financial literacy and business management skills.

Addressing Skills Gaps

Eco Brixs offers youth on-the-job training, particularly about safe and healthy practices during picking, sorting, and transporting waste. It also empowers the youth with interpersonal, soft skills training relevant for the effective engagement with local authorities and community members in the areas where they pick plastic waste. This helps them to connect with communities and boost their safety while at work in their communities.

Next to that, Eco Brixs also provides training specifically focused on youth interested in becoming entrepreneurs. The five-day training program prepares the trainees to start up their own recycling initiatives. At the end of the five days, the trainees are equipped with the knowledge and foundations necessary to build a successful recycling project. The training focuses i.e. on networking skills, business operations, legal affairs and frameworks, marketing and sales and impact measurement.

Addressing Exclusion on the Basis of Gender, Disability, and Refugee Status

Eco Brixs has addressed this challenge through identifying and earmarking jobs within its operations and in its supply chain that are more suited for girls and women, and persons with disability. For instance, sorting plastic waste at the recycling plant is dominated by young women and persons with disabilities. Similarly, cutting hard plastic (HDPE) into relatively smaller pieces before mechanical processing is predominantly done by young women and persons with disabilities (physical, hearing and speech impairment). According to Eco Brixs staff interviewed, 50% of the workers in the recycling plant are persons with different forms of disability. Eco Brixs has also considered targeting refugee communities. For 2025, Eco Brixs intends to grow its model particularly in Nakivale Refugee Settlement in South-Western Uganda with a view to empower

refugee and host communities to recycle plastic waste, create jobs, and enhance their livelihoods.

Promoting Job Decency

Plastic waste collection and processing is a tough sector, with much manual labor and with work often done under challenging circumstances. Eco Brixs acknowledges these challenges and tries to address this amongst others through training (see also above) on safety and hygiene while during the work. Furthermore, Eco Brixs also provides some (but not yet all) of the youth involved in picking and sorting and in processing with Personal Protective Equipment (PPE). This is intended to enhance their safety and health as they pick, sort plastic and as they operate the processing machines. However, given the huge number of youths involved, especially in picking plastic waste, the company can't reach or cover these activities for all youth involved and is therefore also encouraging others to work on the protection and safety of youth involved.

> *We train the youth on the use of PPE; we tell them that they are supposed to wear gumboots, put on gloves. But the challenge is we have a very big number of youth, and we cannot give everyone PPEs. But at least we are creating awareness about safety, and we empower them to enhance personal safety while at work. For the youth that are formally employed, they benefit from medical cover and NSSF-National Social security Fund.*
>
> ***(Key Informant – Eco Brix).***

Benefits Gained by Young People

Eco Brixs recycled 1,226 tons of plastic in 2024, compared to the 288 tons of plastic recycled in 2023. This meant growth in economic impact for the beneficiary community. For instance, while in 2023, Eco Brixs paid out $47,670 for plastic across the year, in 2024 the company paid $236,189 for plastic waste to the individuals who supplied plastic waste. This growth (which is expected to continue over the coming years) meant that Eco Brixs was supporting 4,615 marginalised people with plastic collection jobs by the end of 2024, increasing from 3,000 people (plastic collection jobs) recorded by the end of

2023.[31] Under the CFYE portfolio, Eco Brixs created 1,131 jobs and improved another 1,739 jobs. The job opportunities have assured the beneficiaries income and improved livelihood.

Voices of Study Participants

Income Gained from Picking Plastic Helps a Youth Meet her Needs

…One of our waste collectors has a mild mental impairment. To make some money she started collecting plastics and bringing it to us. She told us not to give her money from the sale of plastic waste but to keep it (save) for her. The office kept the money, and it accumulated to about UGX 1.8 million. After some months of saving, she came and asked for a partial payment to buy a mattress. Towards her childbirth, she asked for another portion of her money to buy a mama kit and baby's clothes. She got to give birth and later on move into a better living space. People who knew her as mentally impaired wondered how she could afford all that. She shared her story and that inspired the youth

(Key Informant – Eco Brix).

Surviving Joining a Risky Trade-Commercial Sex

There was a woman who was doing frying and vending chips on the roadside in Masaka town. Her business was so demanding; it was capital intensive at least by her standard. At the end of the day, she would make a profit of approximately UGX 10,000. She told us she was almost considering the alternative of prostitution. One day on her way back from work, she encountered someone picking bottles and learnt that there is market for plastic bottles. She was directed to Eco Brixs, and in two weeks, she earned UGX500,000. At first her parents were not happy saying she was embarrassing them but when they saw the UGX500,000, they were surprised, and they joined the business. She now has a bulking centre.

(Key informant – Eco Brix).

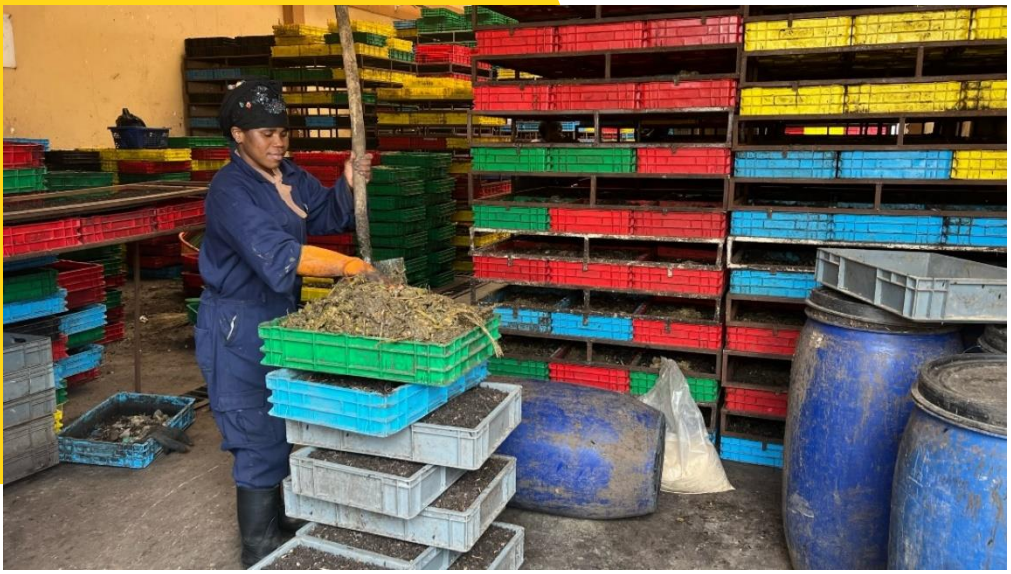
[31] https://www.ecobrixs.org/

The Assured Income Has Enabled Some Youth to Start a Family

I have constructed a small house for myself. I have also been able to get married. Before I started collecting plastic waste, I was unable to, because I was always worried about how I could provide for a family without a job. But now that I have this job, I am able to take care of her.

(Youth in Picking Plastic Waste in Masaka).

Case Study 3: Marula Proteen



Marula Proteen Ltd is an organic waste recycling company that employs youth along the value chain of collecting and recycling organic waste into feed and fertilisers, using insect technology (black soldier fly). The company sources the organic waste from markets and hotels in Kampala and partners with companies that supply them with organic waste from their processing operations, such as pineapple-, coffee- or avocado-processing companies operating in different regions across Uganda. Partnering with Kampala Capital City Authority enabled the company to secure land and space for their operations.

The company addresses some of the major problems that Uganda and its cities face, such as uncollected and untreated waste that pollutes the city, the environment, and posing a public health hazard (unsustainable waste management), low agricultural productivity due to lack of agricultural inputs; and staggering rates of youth unemployment.[32] In regard to unsustainable waste management, Marula Proteen reports that Kampala generates over 2,800 tons

[32] https://www.ugandaeuropebusinessforum.com/profiles/services/marula-proteen-uganda-limited/

of organic waste per day, out of which only 40% is collected. The uncollected waste remains scattered throughout the city, attracting pests and clogging the sewage and releasing considerable amounts of GHG.[33]

The company provides a solution for this problem by collecting the organic waste from Kampala's markets and processing companies and feed the waste to the larvae of the Black Soldier Fly. After a short rearing period of 8 days, the larvae, which are rich in protein and fat, are harvested, dried, and the fat (ProOil) is extracted. The residue is further processed into high-quality animal feed (ProFeed). The ProOil is used as a valuable feed component, especially in aquaculture and piggery. The organic waste decomposed by the larvae (residue) in this process becomes a valuable organic fertiliser (ProTilizer).[34, 35]

Strategies Adopted to Address the Challenges

Raising Awareness on Job Creation and Opportunities

The company raises awareness about and changes their mind set towards sorting organic waste and embracing the job opportunities that the organic recycling sector offers for young people. Given that they target youth, social media platforms such as Facebook are used to create awareness. In addition, community sensitization sessions are organized, particularly in and around communities where the recycling plants are located. According to the staff of Marula Proteen, this has changed over time the way communities and youth think about organic waste recycling and up-taking job opportunities that the sector offers.

---

[33] https://uplink.weforum.org/uplink/s/uplink-contribution/a012o00001pTxf0AAC/circular-wastetofood-systems

[34] https://vc4a.com/ventures/marula-proteen-ltd/#:~:text=We%20feed%20the%20organic%20waste,the%20fat%20can%20be%20extracted.

[35] https://www.ugandaeuropebusinessforum.com/profiles/services/marula-proteen-uganda-limited/

Addressing the Skilling Gap

Using a demand-driven approach, the company empowers youth with skills in rearing five-day-old larvae of black soldier flies and on recycling organic waste into high-nutrient feeds and organic fertilizers using black soldier flies. Individual youth or group of youth, community members interested in venturing into organic waste recycling enterprises express demand and a schedule is agreed upon with the trainers at Marula Proteen. Marula Proteen also trains the youth on how best to use the high-nutrient feeds and organic fertilisers and how to best make an income from it. Interested people are trained to start their own enterprises.

Improving Job Decency

Marula Proteen provides its workers/employees with PPEs to enhance their safety and health while on duty. These include safety boots, face masks, head caps, and overall suits. The company also encourages sorting waste at source so that the youth do not spend long hours of the day scavenging in heaps of waste to separate organic from inorganic waste. This reduces the exposure time to the bad smell emitted by organic waste. The youth employed in the greenhouses also spend relatively few hours in these units given that the temperatures are high (beyond normal).

Benefits Gained by Young People

The impact of Marula Proteen includes the creation of jobs for young people involved in the organic waste recycling value chain. Some youth are employed in rearing the larvae, others work in the green house where the larvae decompose the waste, while some youth are employed in the production chain of animal feeds and fertilizers in the production plant. Formal staff work in administration

and training among other departments. The company has also empowered youth with skills to start enterprises in rearing larvae of black soldier flies as well as producing animal feeds from these larvae, moreover with a short turnaround time within which participating young people earn income.

Within the CFYE portfolio, Marula Proteen created 117 jobs and improved another 1,641 jobs.

Chapter 6: Policy Implications and Recommendations

Arising from the findings of this study, this part of the report articulates pathways for policymakers, practitioners and other stakeholders to enable a green transition in Uganda. The report sheds light on the policy implications and goes on to advance a range of recommendations relevant to addressing the identified barriers of green financing, green skilling, limited awareness, job decency, and gender-specific barriers.

Policy Implications

A synthesis of the national policy context reveals that Uganda has made important strides in developing a conducive policy regime to aid the country's transition to a green economy. However, this is just one of the many steps needed to actualise the transition. Implementation of existing policies is one other necessary step. Given the policy direction and guidance provided or implied by the existing policies, the ecosystem actors including the public sector actors, private sector actors (business companies, investors), social enterprises, TVET institutions, civil society organisations, employers, youth organisations, youth groups and youth leaders, among others need to discern their respective obligations, interact and coordinate to translate the policy provisions into tangible outcomes.

The key gaps identified have clear implications for policy. For instance, the skilling gaps imply that the youth skilling policy agenda needs to be intentional about addressing the existing green skills gaps among youth in Uganda. The findings from this study should compel policy makers and practitioners to rethink the current skilling programs and initiatives for youth, ensuring that green skilling for youth secures a place in the youth skilling programmes and initiatives in Uganda. Some of the policy frameworks to leverage include Uganda's National Youth Policy and the attendant National Youth Action Plan. Policy guidance by these frameworks can only be seen as effective if it used to engage TVET institutions and implementers of youth apprenticeship programmes in the country to deliberately integrate green skilling in their curricula. The call to adapt the TVET curricula should be seen as a means to widen job and career opportunities for the youth in a green economy and in non-traditional employment sectors. It is a call for a targeted skilling strategy that transcends the focus on "traditional" economic sectors.

The evidence generated by this study similarly bears policy implications for green financing, where the majority of financiers tend to shy away from financing (early-stage) and youth-driven businesses in green sectors. Green sector ecosystem actors need to take a centre-stage in engaging finance institutions to enable them to understand the uniqueness and potential of green business models and how these models differ from the other business models. Providing green finance is critical for driving sustainable economic growth while addressing environmental challenges, and financial institutions have an indispensable role to play in supporting Uganda's transition to green growth. This is the only way to bridge the financing gap identified under the Uganda Green Growth Development Strategy (UGGDS) which is estimated at USD 11 billion (SEED, ACODE and NPA, 2022)[36].

Besides securing policy shifts at the financial institutions' level to accommodate green financing, it is paramount that the national regulatory environment for green financing exists. This ought to be underpinned by favourable policies, and incentives that guarantee profitability and stability of green investments.

Recommendations

To conclude this report, a set of recommendations are presented with both policy and practice implications for addressing the 5 key barriers identified by this study.

Recommendations to Address the Financing Challenges

- Address the low confidence among financial service providers in financing green business models. This requires building compelling evidence that green business models are bankable (viable and profitable). Data is key in this regard.
- Support youth-led and youth-focused green enterprises to be investment-ready. It is important that the green enterprises understand

[36]SEED, ACODE and NPA (2022). Enhancing Green Finance Access for Green Growth. Policy Landscape Paper Uganda, Berlin, Germany. Available at: https://www.acode-u.org/uploadedFiles/enhancing-green-finance-access-for-green-growth.pdf

the specific needs and expectations of potential financial service providers. The enterprises also need to have clearly developed and refined growth strategies. This includes support in formalizing their businesses as this is a key requirement for most financiers and prospective (government) clients.

- Addressing investors knowledge gaps and providing guidance on promising investment opportunities in green sectors. These gaps for instance relate to assessing the viability and profitability of green business models due to a lack of expertise and experience. A good example is the Uganda Green Enterprise Finance Accelerator (UGEFA) project[37], which through its Green Finance Academies institutionalized the provision of technical assistance on green and sustainable finance to financial stakeholders.
- There is a need to design financial products and its delivery to better fit the everyday realities of enterprises in green sectors. These redesigned financial products could for instance better incorporate cash flow dynamics and the seasonality of certain sectors. They should also acknowledge that g green enterprises are mostly active further away from the main economic centers, such as the capital. Scaling up green finance would mean that financiers reach out and provide their products and services to the different regions of the country.
- Policy advocacy and engagement targeting local actors and experts (both public and private ecosystem actors) to advocate for and foster financing policy reforms in the three sectors of focus. These should streamline policies that champion a change in the financing framework in favour of green enterprises for instance through more favorable loan rates.
- Promote public-private partnerships. In the Ugandan context where local urban authorities are financially constrained to recycle waste due to underfunding, leveraging the PPP (public-private partnerships) model to ease the financing challenges creates a win-win situation for the urban authority and private sector actors. So far, most PPPs in the management of waste in Uganda are limited to collecting waste. This stifles the job opportunities that otherwise would have been created through recycling.
- Carbon financing: There is need for the ecosystem actors to take more advantage of the opportunity to generate carbon credits in green sectors.

[37]Fischer, F. (2024). UGEFA Impact Assessment 2024: Greening the Ugandan Finance Ecosystem through SME Investments. Berlin: adelphi research gGmbH

According to the East African Alliance on Carbon Markets and Climate Finance (2022)[38], Uganda has a total of over 33 million carbon credits issued from the Clean Development Mechanism (CDM) and Voluntary Carbon Market (VCM) standards. Whilst evidence available suggests that the VCM activities in Uganda are dominated by energy efficiency activities supporting improved cook stoves as well as other project types like biogas projects (Ibid), Eco Brixs' Carbon and Plastic Offset impact programme demonstrates a case example of working models.

Recommendations to Address the Challenge of Shortage of Green Skills

- Institutionalise green skilling: This calls for identifying current and future skills needs for green jobs. The identified skills needs should inform the design/reforming of curricula. The government and the private sector need to work together on this. This however has implications for institutional capacity. It calls for assessing institutional capacity and addressing the identified institutional capacity gaps.
- Policy shifts are necessary to pave way for TVET institutions to integrate green skilling in their curricula (taking into account the job profiles across the value chains of the three sectors); building capacity for their workforce to deliver such training; designing internship programmes, competence standards; and certification of the trained youth.
- There is need for stronger collaboration and clearer role division between private and public sector actors around green skilling. The roles may include identifying the green skills needs, designing of targeted green sector curricula, providing internship opportunities, and sponsoring of trainees. Public TVET institutions, and the responsible government agencies such as the Directorate of Industrial Training (DIT), National Curriculum Development Centre, Ministry of Education and Sports, Ministry of Agriculture, Animal Industry and Fisheries will need to actively collaborate on this with the private sector.
- Skilling for value addition: The owners of green SMEs need to be better equipped with skills to recycle and add value to the collected waste. Primary data obtained indicated that most of the youth operate at the lower points of the values chains in the three sectors. This keeps them

[38] https://climatefinanceinnovators.com/wp-content/uploads/2023/06/Carbon-Report_-Uganda_2023_Rev03_single.pdf

marginalised and economically vulnerable. It is thus imperative that up-skilling across the different value chains addresses their skills gaps in adding value to organic waste, plastic waste, and honey.

Recommendations to Address the Challenge of Limited Awareness

- Embrace different forums and platforms for creating awareness about the economic potential and decent jobs created by the waste recycling and apiculture sectors. Targeted audiences need to be targeted using different platforms. For instance, grassroot community members and leaders can best be reached through community sensitisation. Youth can be reached through digital platforms including social media.
- Address the attitudes of the youth and community members about separation of waste at source and recycling in general. Harnessing the political goodwill can help in ensuring that separate containers are provided for different kinds of waste, as well as sensitising the masses about the same.
- Engage ecosystem stakeholders to uphold their mandate on creating awareness about green sectors and green growth as provided for in the relevant policies, national strategies, and action plans.

Recommendations to Address the Challenge of Green Job Decency and Quality

- Address the high rates of informality. Formalising jobs in particularly the waste recycling sector can offer an opportunity for the youths to benefit from formal work-based social protection cover which in Uganda is by and large a preserve of formal workers.
- Alternatively, opportunities could be explored to set up collective (health) insurance arrangements, with premiums organised together with waste processors and organized groups of (individual) waste collectors. The same could go for more agri workers in producer groups and in collaboration with off-taking companies.
- Building on the above, creating groups, cooperatives or even unions of individual waste collectors could help to strengthen their voice in their quest for improving working conditions.
- Create opportunities for increased income by offering (practical) training opportunities through which unskilled young workers can take up jobs or positions with more responsibilities, leading to increases in their income.
- Address the safety risks that youth face. More widespread introduction of protective equipment and a wider roll out in safety training could

significantly reduce the safety risk inherent to the (manual) work that is often dominant in green sectors.

Recommendations to Address the Gender-Specific Barriers

- Aware that some of the gender-specific barriers are driven by gender norms, tackling these norms through awareness campaigns can make a difference. This involves demystifying and/or neutralising the masculinities associated with some value chain activities in the different sectors.
- In the apiculture sector, fostering women's and youth's access to land for sitting their beehives is critical to ensuring their inclusion as is the opportunity to access modern beehives. In the other green sectors that were discussed in this report, there's a need for business owners to take gender considerations into account in HR, recruitment and staffing, so that young women feel "welcome" to work in green sectors and are enabled to take up relevant jobs and income generating opportunities.
- Ensuring women's access to finance: Whilst youth generally face financial challenges in their pursuit of green enterprises, women are relatively more affected by this. Financing of green enterprises should take into account the unique barriers that women face so as to level the ground for both male and female youth's access to finance.
- Implementing targeted policies for affirmative action within the green job sector. The policies and the resultant affirmative action should provide for targeted support for women-led green businesses. The support should cut across green financing, green skilling, awareness creation, and job decency.

Annex 1: Research Methodology

This cross-sectional qualitative study adopted a case study design. Three IPs from CFYE's Uganda portfolio were selected for case studies. Using a case study design helped to gain concrete, contextual, in-depth insights of the green job opportunities for young people in the respective sectors, the potential of the sectors for creation of green jobs, the barriers that hold back this potential as well as the measures that these green sector players have attempted to address the identified barriers.

For each of the cases, we explored the organisations' business model including job opportunities for young people that are integral to the business models; the challenges and systemic barriers they face; the strategies they have adopted to address the challenges and to create jobs for young people.

In addition to the three CFYE IPs, other green sector players (beyond CFYE portfolio) were interviewed. Some of these were partners of Eco Brixs, Marula Proteen and Woord & Daad; others were key players running private businesses and social enterprise models in the three green sectors of apiculture, organic waste recycling and plastic waste recycling and thus, well placed to share insights about youth employment (opportunities, potential, barriers, and pathways to a just transition to a green economy) in the respective sectors. Officials of Kampala Capital City Authority (KCCA) were also interviewed because KCCA is primarily mandated to oversee waste management in Uganda's capital - Kampala.

The study participants included the following:

- Six staff of the different CFYE IPs including: two (2) staff of Eco Brixs, 2 staff of Marula Proteen and 2 staff of Woord en Daad
- Partners of the CFYE IPs including: The Uganda National Apiculture Development Organization (TUNADO), and World of Bees (partners of Woord en Daad); Enimiro, ENTO Feeds, Biosynthec (Partners of Marula Proteen); and Takataka Plastics (partners of Eco Brixs).
- Private sector actors and social enterprises in the green economy in Uganda including Biodiversity Conservation – Masaka; JANGU International – Mpigi; Waste to Energy Youth Enterprise (WEYE) Kampala, Uganda; Joint Energy and Environment Projects (JEEP); Climate Smart Jobs; and Green Bio Energy.
- Kampala Kapital City Authority
- Informal sector actors running enterprises involved in plastic waste

collection, sorting, bulking, and recycling, and in organic waste recycling enterprises.

- Youth involved in youth-led green startups/green jobs including beekeepers, comb honey aggregators, apiculture youth trainers, youth in plastic waste recycling value chain and youth in the organic waste recycling value chain.

Alongside primary data, relevant secondary data was reviewed and synthesized. This included data on the context of green jobs in Uganda, business models of the different green sector players, the challenges and barriers to creation of green jobs for young people. Primary and secondary data were analysed thematically in a complementary manner.