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This master's thesis explores the theme of sustainable entrepreneurship in East Africa, focusing on addressing prevalent issues such as irresponsible waste management, social inequality, low educational levels, and unemployment. Therefore, the following research question has been investigated:

How can the prospects of sustainable entrepreneurship for communities in East Africa be enhanced?

To answer the research question, three analyses have been conducted: *Mapping of Sustainable Businesses*, *Mapping of Other Relevant Actors*, and *Investigation of prospects of sustainable entrepreneurship*. Based on these analyses, recommendations for knowledge institutions and sustainable businesses are presented as two posters. The recommendations include widespread awareness of sustainable business opportunities and expansion of curriculums to include circular economy and problem-based learning etc. Thereby, knowledge institutions and sustainable businesses can enhance prospects of sustainable entrepreneurship in East Africa if they implement the recommendations.

By signing this document, each member of the group confirms participation on equal terms in the process of writing the project. Thus, each member of the group is responsible for the all contents in the project.

SUSTAINABLE ENTREPRENEURSHIP IN EAST AFRICA

AALBORG UNIVERSITY

MASTER'S THESIS - JUNE 2023

ANNEBETH COLIC LANDSVIG, CORNELIA SEGER JAKOBSEN & FRIDA SKOVGAARD SØRENSEN

Summary of Sustainable Entrepreneurship in East Africa

East Africa experiences consequences due to irresponsible waste management, as waste is often burned or dumped. In addition to environmental concerns, East Africa experiences prevalent social issues such as inequality, low levels of education, and high unemployment rates. Furthermore, the economic conditions in the region are challenging, with a significant portion of the population living in extreme poverty. To address these issues, sustainable entrepreneurship has emerged as a potential solution. However, several obstacles hinder the progress of sustainable entrepreneurship in East Africa. Therefore, through this master's thesis, it is intended to answer the following research question: *How can the prospects of sustainable entrepreneurship for communities in East Africa be enhanced?*

Certain delimitations are implemented to ensure focused and comprehensive research, as the topic of sustainable entrepreneurship in East Africa encompasses fairly broad. The delimitations include the Quadro Helix perspective to investigate relevant actors' opportunities and obstacles regarding sustainable entrepreneurship. Furthermore, the delimitations include a geographical limitation within East Africa regarding data collection, as interviews and observations were conducted in Uganda, Kenya and Tanzania.

The methods include interviews, observations, and a systematic literature search. The interviews are conducted to collect data and gain insights into the concerned individual's perspectives and experiences related to sustainable entrepreneurship. It was chosen to do semi-structured and unstructured interviews for flexibility and to capture different perspectives. The interviews are conducted face-to-face with relevant actors in Uganda, Kenya, and Tanzania, including business owners, experts, professors, and students. Observations are conducted to obtain real-life insights into different circular organisations. Participant observations are chosen, where the observers become part of the observed environment. Four participant observations are conducted in Kenya and Zanzibar, focusing on sustainable businesses and initiatives. The observations provide a firsthand understanding of how these organisations function and use resources considered waste to create economic opportunities and reduce environmental impact. Finally, a systematic literature search is conducted to identify relevant literature on sustainable entrepreneurship. This search process involves documenting search terms and following an organised and structured approach. The systematic literature search adds validity and reliability to the research findings by incorporating existing knowledge and scholarly perspectives.

The project completes with a conceptual framework for sustainable entrepreneurship, focusing on three parameters: Africapitalism, Base of the Pyramid and Circular Business Models. Africapitalism embraces economic development while creating social and environmental value within the African context. Base of the Pyramid refers to individuals or communities at the lowest part of the global economy and how these should be included in the markets. Circular Economy Models embrace the principles of circular

economy, specifically focusing on the 9Rs. Sustainable entrepreneurship is defined based on the integration of these parameters. The level of sustainability depends on the presence and integration of the characteristics of each parameter which are illustrated through an assessment tool. This tool assesses; how well the base of the pyramid is elevated, which of the 9Rs within circular economy is expressed, and how represented africapitalism is.

The assessment tool is used to map and assess several businesses in East Africa to understand their experiences with sustainable entrepreneurship. Most of the businesses express elements of sustainable entrepreneurship, but there are opportunities for improvement, especially in the parameters of CBM and Africapitalism.

The project investigates the role of public institutions, knowledge institutions, and local communities in sustainable entrepreneurship in East Africa based on the Quadro Helix perspective. Public institutions must implement regulations and policies effectively to enhance sustainable entrepreneurship. Knowledge institutions can enhance sustainable entrepreneurship by including circular economy and BOP approaches in their curriculum and education. Local communities must also be considered, as societal norms, culture, employment opportunities, and inequality pose challenges to sustainable entrepreneurship.

The project investigates how to improve the conditions for sustainable entrepreneurship in East Africa based on previous findings in the project. It is determined that knowledge institutions and businesses must lead the transition towards sustainable entrepreneurship. Therefore, to assemble the results, eighteen recommendations on how to engage potential and existing entrepreneurs to become sustainable are expressed through two posters for respective knowledge institutions and sustainable businesses. The recommendations for knowledge institutions include facilitating public lectures and workshops and educating businesses on how societal norms and pricing strategies affect market positions. For sustainable businesses, the recommendations include participation in knowledge-sharing groups and widespread awareness regarding sustainable business opportunities.

The presented recommendations are context-specific and can enhance the prospects of sustainable entrepreneurship in East Africa. However, it is suggested that further research is completed to explore the roles of public institutions and local communities and understand how entrepreneurship can be enhanced in East Africa. Additionally, research in other regions is recommended as the recommendations are specific to the East African context and may need adjustments for different circumstances.

Preface

This project constitutes the Master's Thesis of the final semester for the Master Sustainable Cities at Aalborg University. The project was conducted from the 30th of January 2023 to the 2nd of June 2023, focusing on the theme of Sustainable Entrepreneurship in East Africa. The project's initial phase, from the 30th of January to the 26th of February, involved fieldwork in three East African countries, Uganda, Kenya and Tanzania, to gather empirical data. In preparation for the project, interviews and observations were conducted with key actors within Sustainable Entrepreneurship in the three East African countries. Therefore, a special thanks is extended to:

- Peter Okwoko and Paige Balcom, owners of Takataka Plastics
- Collins Okello, dean of the Faculty of Agriculture and Environment at Gulu University
- Anywar Collin, bachelor student at Gulu University
- Geoffrey Tabo Olok, professor at the Faculty of Science at Gulu University
- Judith Awacorach and Patrick, PhD students at the Faculty of Business and Development Studies at Gulu University
- Grace Kola, administration and community officer at Circular Innovation Hub
- Zablon Wekesa, circular economy expert
- Cecil Sagawala, owner of Green Composting
- Sjani Muggenburg, owner of Recycle at OZTI

Furthermore, our gratitude is extended to our supervisor, Arne Remmen, for his invaluable contributions in sharing contacts, providing guidance, and engaging in professional discussions.

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1 Introduction

The world faces environmental, social, and economic issues. Climate change threatens the Earth and all living things, including humans. One of the contributing factors to climate change is overproduction and poor waste management leading to waste burning and dumping in nature. In East Africa, irresponsible waste management is prevalent as waste is burned or dumped. Moreover, East Africa faces pressing social issues such as inequality, low educational levels, and unemployment. The economic conditions in East Africa are challenging, as 44.2% of the citizens live on less than $1.90 per day, classifying them as extremely poor. Therefore, there is a need for diminishing environmental, social, and economic issues in East Africa. Sustainable Entrepreneurship emerges as a potential solution to these issues. However, given the prevalence of obstacles, there is a need to enhance the possibilities of Sustainable Entrepreneurship in East Africa. Therefore, this project aims to investigate how to enhance Sustainable Entrepreneurship in East Africa to diminish environmental, social, and economic issues.

2 Problem analysis

The following problem analysis aims to investigate the problem field regarding Sustainable Entrepreneurship in East Africa. The section examines the overconsumption of resources and waste handling, as well as the existing acknowledgement of the problem field by the European Union and the United Nations. Waste issues in East Africa are investigated to understand the problems regarding waste management systems. Additionally, social responsibility linked to businesses and entrepreneurship is investigated related to the economy, educational level, unemployment and gender inequality. In conclusion, the relation between waste, resources, social responsibility and entrepreneurship is stated.

2.1 Waste handling and overconsumption of resources

The Earth is currently facing massive pressure as a consequence of the environmental issues of climate change, decreased biodiversity, pollution and scarce resources. One of the primary drivers behind these environmental problems is the lack of responsible resource handling. The concept *Earth Overshoot Day* (EOD) estimates when the resources that Earth can regenerate in a year have been used. In 2022 the EOD was estimated to be the 28th of July, hence the resources the Earth can reproduce were nearly used twice in one year. The tendency is that EOD expedites each year, which illustrates the significant overconsumption of resources (Global Footprint Network, n.d.). This overconsumption of resources causes several problems, such as large quantities of waste and irresponsible waste handling. Every year approximately 2.12 billion tons of waste generated by the extraction of materials, production from industries and household consumption are dumped on land or in the ocean. Waste dumping severely affects the Earth by polluting the soil, air, sea and groundwater (The World Counts, n.d.).

The UN recognises the importance of addressing the waste issues through the Sustainable Development Goals, as many of the goals include waste-related problems, e.g. Goal 6: Clean water and sanitation, Goal 14: Life below water, Goal 15: Life on land, and Goal 12: Responsible consumption and production. Goal 12 emphasises waste, focusing on reducing, reusing and recycling waste, improving national policies and raising awareness of waste issues. This is elaborated through a series of targets, including (United Nations, n.d.):

- *12.5: By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse*
- *12.6: Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle*

- *12.7: Promote public procurement practices that are sustainable, in accordance with national policies and priorities*
- *12.8: By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature*

The EU is also taking steps towards addressing waste-related issues by establishing standards and policies aimed at reducing waste. In 2021 the EU implemented restrictions on certain single-use plastics, making it illegal for the EU member states to sell plastic plates, cutlery, straws, balloon sticks and cotton buds on the internal markets. These products can only be sold if they are made of other materials or can be used more times as hard plastic straws, paper cotton buds, bamboo cutlery etc. (The European Union, n.d.).

The EU has additionally adopted the waste hierarchy, which was initially introduced in the European Waste Directive in 1975 and included five steps for waste management: reduce, reuse, recycling, recovery, and disposal (Beagley, 2021). The Waste Hierarchy has experienced criticism for its absence of prevention, focusing solely on addressing materials and products once they have become waste (Ewijk & Stegemann, 2014). As a result, the waste hierarchy has been expanded, and one of the newest proposals for the Use and Waste Hierarchy is presented by the International Electrotechnical Commission (IEC, 2021). The Use and Waste Hierarchy clarifies the difference between a resource where materials and products can still be utilised and waste which refers to materials or products that cannot be utilised. Furthermore, the hierarchy highlights various ways to reduce waste and emphasises the role of the consumers in handling waste and resources (IEC, 2021). The Use and Waste Hierarchy is shown in Figure 1.

Figure 1: The Use and Waste Hierarchy illustrates when a material is considered a resource or waste. The Make and Use phases must be promoted, thus, the Waste phases must be avoided. Illustrated by (IEC, 2021).

The EU is actively pursuing the concept of *circular economy* and has issued standards to enhance circular designs and prevent waste production. One of the latest standard proposals for circular designs: *Method to achieve circular designs of products,* was introduced in 2022 and is currently under review (NEN, 2022). This standard proposal emphasises the importance of integrating circularity into the design phase rather than simply addressing waste management after a product's final use. The standard provides guidance highlighting the importance of incorporating circularity into various stages of the organisation. To facilitate the integration of circularity into product design, fifteen circularity attributes have been identified in the standard proposal. These include cleanability, extended product lifespan, ability to disassemble and reassemble, user acceptance, durability and reliability, and sustainable materials (NEN, 2022.) A standard like *Method to achieve circular designs of products* can be instrumental in integrating circular economy and reducing waste.

Despite the UN and EU implementing waste and circular economy policies, many parts of the world, especially the Global South, are lagging. In these regions, policies and legislation regarding waste are minimal, leading to less enhanced waste management systems (Ferronato & Torretta, 2019). Africa is among the regions in the Global South where proper waste management is underdeveloped (Godfrey et al., 2019).

The waste problems in Africa are enhanced by the absence of waste management systems in rural areas resulting in waste being dumped in nature or openly burned. Additionally, urban areas are expanding rapidly due to more people migrating to larger cities (Godfrey et al., 2019). The waste management systems need to be adequate for the number of people living in urban areas, leading to waste being dumped or burned in these areas. The absence of engagement by the authorities is another contributing factor to the waste problems that Africa is experiencing, with poor implementation of policies and legislation leading to unsystematic waste management systems (Godfrey et al., 2019).

2.2 Waste issues in East Africa

Waste management systems in North, South, and West Africa are advancing by integrating sanitary landfill, composting and recycling treatment. However, these practices still need to be expanded in the East African Community (Shi et al., 2021). The East African Community: Uganda, Kenya, Tanzania, Rwanda, Burundi, and South Sudan has an estimated capita of 283.7 million citizens, with approximately 30% residing in urban areas (East African Community, n.d. a). Waste management remains a problem in rural

and urban areas despite African citizens producing much less waste than citizens worldwide. In 2016 the average African citizen generated 0.49 kg of waste per day, while citizens in the Middle East and Europe respectively generated 0.89 kg and 1.2 kg of waste per citizen (Shi et al., 2021). Despite this, waste management remains unstructured, and East African countries need help to handle their waste responsibly. As visualised in Table 1, the amount of waste generated by East African citizens is expected to increase, exacerbating the already compelling issue of waste management in the region (Aryampa et al., 2019).

Table 1: Waste generation rate of the three largest cities in the East African Community. The table is developed by (Aryampa et al., 2019).

City	Per Capita Waste Generation (kg/cap/day)			
	2015	2020	2025	2030
Kampala	0.391	0.561	0.709	0.843
Nairobi	0.677	1.044	1.094	1.145
Dar es Salaam	1.612	1.761	1.863	1.938

The absence of waste management, as well as prevention, reuse and recycling methods in East Africa, contributes to 46% of the waste in East Africa being openly dumped. Besides, 24% of the waste remains unaccounted for, likely due to the prevalence of open burnings. Figure 2 visually represents the disposal methods currently practised in East Africa, highlighting the significant overload of poor waste management practices in the region (Shi et al., 2021).

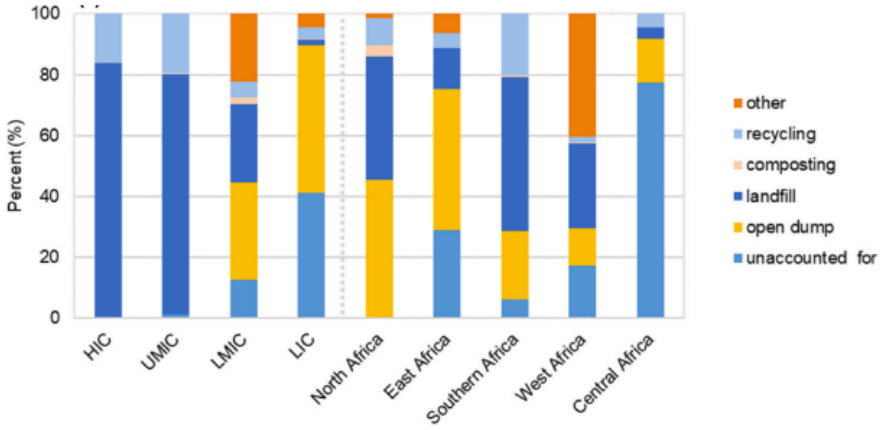

Figure 2: The graph illustrates the distribution of waste management in various societal groups and regions. These include high-income (HIC), upper-middle (UMIC), lower-middle (LMIC), low-Income (LIC) and five regions of Africa. Illustrated by (Shi et al., 2021).

The issue of poor waste management is evident in the streets of East Africa. Waste is carelessly disposed of in both urban and rural areas. Burning waste is a common practice, releasing harmful smoke that pollutes the air and poses significant health risks to the population (Sutton, 2022). Moreover, landfills often need to be more organised and are usually located near residential areas leading to adverse health effects (Environmental Justice Atlas, 2015). Figure 3 demonstrates the magnitude of this problem.

Figure 3: Pictures of waste dumping, burning, and disposing in Nairobi and Zanzibar.

The absence of active participation of the authorities in East Africa is one of the reasons for the inadequate waste management systems. However, there are initiated waste management initiatives where governments have implemented legislation and policies to improve waste management practices. For example, the government in Zanzibar implemented an environmental policy in 2013 that promotes infrastructure services for waste management, standards and guidelines and creates awareness (Revolutionary Government of Zanzibar, 2013). Similarly, the government in Kenya implemented a sustainable waste management act in 2022. This mandates implementing standards and guidelines, research, awareness and development of the waste management infrastructure by the waste management council (Kenya Law, 2022). In Uganda, a similar regulation was implemented in 2020 that emphasises waste hierarchy and prevention (Government of Uganda, 2020). Despite these efforts, policies and regulations regarding waste, the waste management systems in East Africa still experience significant challenges. The absence of monitoring and enforcement of policies and regulations may contribute significantly.
The waste generation in East Africa must be minimised significantly, yet the authorities are not participating in this process. Besides the lack of support from the authorities, awareness among the citizens regarding waste is minimal. However, awareness plays a massive part in the inadequate waste management systems in East Africa and the increasing amount of waste produced (Appendix A).

2.3 Social responsibility in East Africa

In addition to the pressing issues of waste production and management, East Africa faces various other social issues. The citizens are considered some of the world's poorest people, and in 2021 it was estimated that 86.4% of the population in East Africa lived on less than $5.50 per day. Besides, 68.8% of the population lived on less than $3.20 per day, and 44.2% lived on less than $1.90 per day, as shown in Figure 4 (Aguilar et al., 2021).

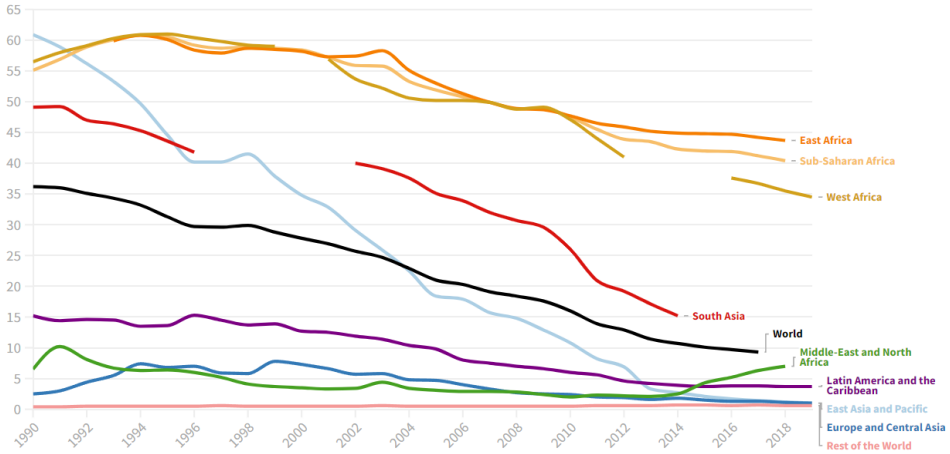

Figure 4: The graph illustrates the percentage of individuals from various regions' populations living on less than $1.90 per day in 2021. Illustrated by (Aguilar et al., 2021).

East Africa is one of the poorest regions in the world due to droughts, conflicts, and unstable economies. The extreme poverty in East Africa affects citizens' living conditions with minimal access to clean water, transportation, housing, energy, and education (Hood, 2022). The educational level in East Africa is thus very low (Kamer, 2022). Various factors contribute to the lack of education among the youth in East Africa, including financial barriers, long distances to schools, traditional practices and restrictions imposed by legal frameworks (Habitat for Humanity, n.d.) The average salary in East African countries varies depending on the specific country. In Kenya, the average monthly salary in 2023 is $1291; in Uganda, the average monthly salary is $738; in Tanzania, it is $537 (Salary Explorer, n.d.). However, it is worth noting that a significant portion of the population is engaged in informal and unrecorded employment, such as street traders or selling souvenirs on the beach, which may go unaccounted for in the statistics. Yet the statistics on salaries in East Africa show that the average salary in East Africa is lower compared to the average annual salary in Europe of €33,500 (Eurostat, 2022). Hence, the low salary levels and educational attainment in East Africa emphasise a need for improved education and enhanced job opportunities in East Africa.

Gender inequality is another pressing social issue in East Africa. Worldwide, women are paid less than men, as women are paid 77 cents for every dollar men are paid. This issue also appears in East Africa, as in the sub-Saharan African countries, there is a gender pay gap of 30% compared to 23% globally (United Nations Women, 2022).

The social issues prevailing in East Africa are widely acknowledged globally. In the Sustainable Development Goals developed by the UN, several goals, targets, and indicators address how to handle social issues. Goal 1 addresses how to elevate people living in poverty by implementing programs, ensuring equal rights, and making the communities resilient to climate change events. Goal 4 focuses on providing quality education by implementing better and more accessible education. Goal 5 addresses gender equality and women empowerment, and Goal 8 focuses on decent work and economic growth (United Nations, n.d.). Thereby, there is a considerable need to improve and solve social and economic issues in East Africa.

2.4 Sustainable Entrepreneurship in East Africa

A way the environmental, social and economic issues in East Africa can be improved is by Sustainable Entrepreneurship. By embracing Sustainable Entrepreneurship, the local communities in East Africa can establish businesses that leverage resources customarily considered as waste and limit production expenses. Besides, these businesses have the potential to provide employment opportunities for locals and reduce inequality.

Entrepreneurship can increase employment and economic growth in East Africa, but the opportunities for formal entrepreneurship[1] are inadequate. In East Africa, business regulations have been developed to ease doing business. Yet there are many obstacles when establishing formal entrepreneurship in East Africa. First, entrepreneurship should be for the ordinary people in East Africa, but the regulations and opportunities are only available to the higher middle class. This is because the registration process is unmanageable, and the fees and taxes are too high (Golla, 2015). Therefore, it is difficult for the lower middle class, people living in rural areas, women, and youth to do entrepreneurship. Likewise, finances compose a significant problem, as limited assistance is available, making it challenging to get funding. Furthermore, the high prevalence of fraud in East African countries adds to the risk of entrepreneurship (Tillmar, 2016a). Particularly, small and medium-sized enterprises (SMEs) have difficulty getting financial support to expand and progress (Isaga & Musabila, 2017). Collins Okello, the dean of the Faculty of Agriculture and Environment at Gulu University in Gulu, Uganda, mentions that most businesses close within their first year, and therefore there is an undeniable need to help entrepreneurs to sustain themselves (Appendix B).

The concept of circular economy is gaining momentum in East Africa, creating great potential to implement circular economy further, as circular practices already exist (Nijman, 2020). Yet, knowledge about circular economy is not common among the locals. The schools and universities in East Africa are not taught circular economy, so the locals need to seek knowledge themselves (Appendix C).

As mentioned, most of the waste in East Africa is being dumped or burned. Therefore, a lot of resources could have been utilised better. As visualised in Figure 5, organic waste is the most pronounced type of waste in East Africa, as its share is 74%. Besides, plastic, paper and cardboard have a significant share (Shi et al., 2021). Thus, there is a possibility of giving these resources a new life with knowledge about circular economy.

[1] Formal entrepreneurship is meant for entrepreneurs developing businesses that are registered legally (Deléchat & Madina, 2020).

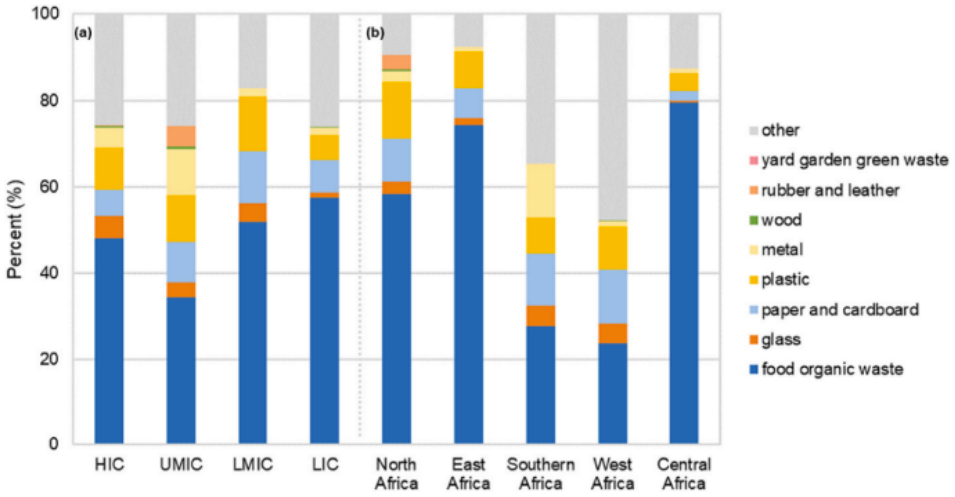

Figure 5: The graph illustrates the distribution of waste categories in various societal groups and regions. These include high-income (HIC), upper-middle (UMIC), lower-middle (LMIC), low-Income (LIC) and five regions of Africa. Illustrated by (Shi et al., 2021).

The waste can be given a new life by utilising the materials. Examples are that organic waste can be recycled into compost, and glass can be reused to make drinking glasses and jaws. These are just examples, many more possibilities that let the waste become a part of a circular loop exist.

When discussing entrepreneurship in East Africa, circular economy is a way to improve the businesses to be advantageous for the environment and, at the same time, use materials that are cheaper and accessible for the entrepreneurs. Businesses built upon circular economy already exist in East Africa. Even though these circular businesses are present in East Africa, there is still a long way to minimise waste. Besides, social responsibility and finances are essential when investigating entrepreneurship in East Africa. Many people are living in poverty, and their educational level is low. Likewise, equality is missing as women are paid less than men and the youth attempt to find jobs. It is not easy to develop and sustain sustainable businesses in East Africa, and the businesses that survive find it challenging to have a profitable business and enter the market. Hence, there is a need to create better possibilities for entrepreneurs in East Africa to establish sustainable businesses that improve the environment and the economy while being socially responsible.

3 Research Question

Based on the above problem analysis, this project aims to investigate how Sustainable Entrepreneurship can be enhanced in East Africa. Enhancing Sustainable Entrepreneurship means that businesses integrate improvements for both environmental, social, and economic sustainability. Therefore, the following research question has been formulated:

How can the prospects of Sustainable Entrepreneurship for communities in East Africa be enhanced?

3.1 Sub-questions

1. What are the experiences with Sustainable Entrepreneurship in existing businesses in East Africa?

2. Which roles do different relevant actors play in enhancing Sustainable Entrepreneurship in East Africa?

3. How can the conditions be improved for Sustainable Entrepreneurship in East Africa?

4 Delimitations

Certain delimitations are implemented in this project to ensure more focused and comprehensive research, given that the topic of Sustainable Entrepreneurship in East Africa is quite broad. The following section outlines the delimitations not presented elsewhere in the report. The delimitations described in the section are Quadro Helix, East Africa, respondents in East Africa and businesses and micro, small and medium-sized enterprises.

4.1 Quadro Helix

Quadro Helix stems from the concept of Triple Helix, where companies, authorities, and academia cooperate when doing research and development. Civil society must be included to secure sustainable development (Merrild, 2016). Thus, the concept of Quadro Helix concerns that companies, authorities, academia and civil society cooperate for improved development. Involving all four actor groups in development can secure multidisciplinarity and ensure more interest (Merrild, 2016).
In this project, the Quadro Helix concept has been utilised to structure and ensure the inclusion of all relevant actor groups regarding Sustainable Entrepreneurship. It has been chosen to give the four actor groups other appropriate names adjusted for the project. The companies are referred to as *businesses*, the authorities are referred to as *public institutions*, academia is referred to as *knowledge institutions,* and the civil society is referred to as *local communities.*

4.2 East Africa

This research is delimited to investigate Sustainable Entrepreneurship in East Africa. The definition of East Africa used in this project includes Burundi, Kenya, Rwanda, South Sudan, Tanzania and Uganda. However, the self-collected data is focused on Uganda, Kenya and Tanzania, as interviews and observations are solely conducted in these East African countries. The regions where the empirical data is collected are Gulu, Nairobi and Zanzibar due to limited resources. A map showing the East African countries and regions is found in Figure 6.

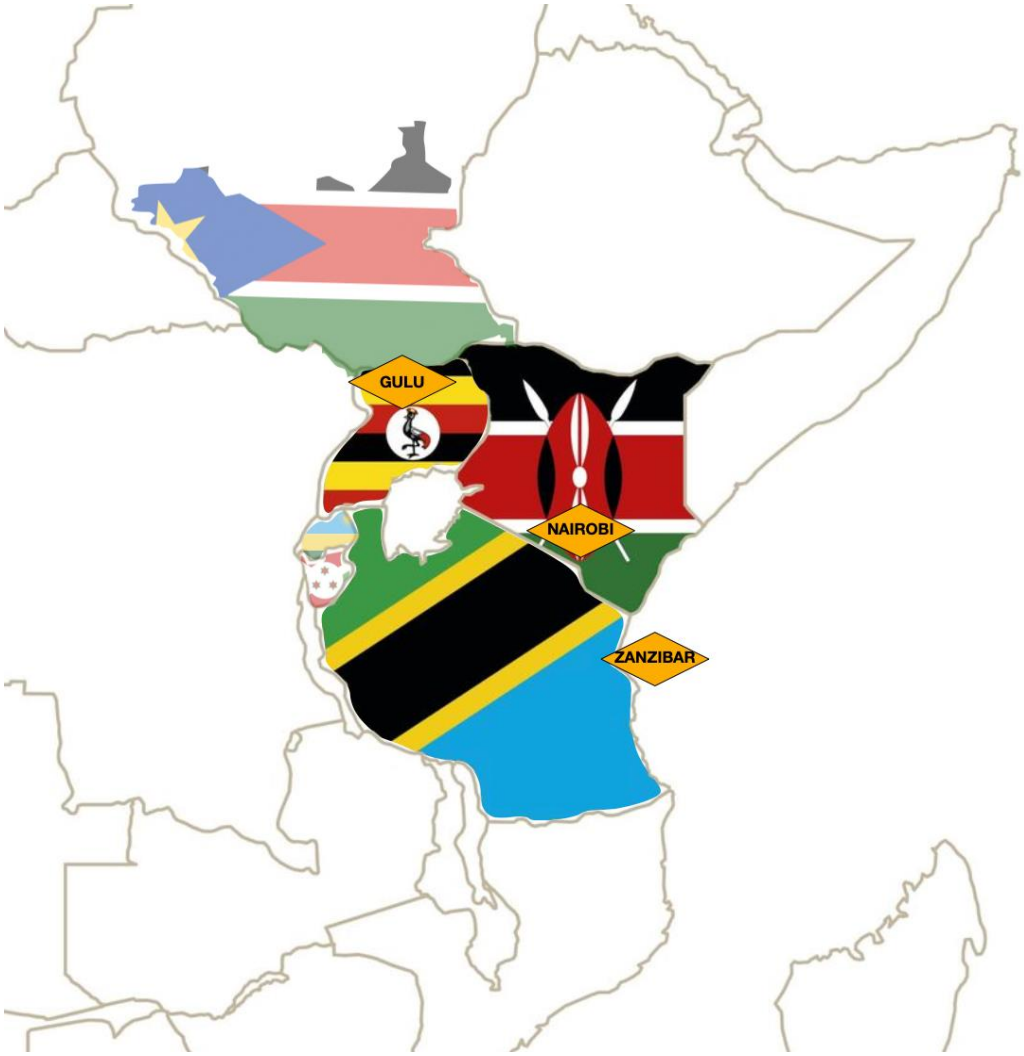

Figure 6: The map shows the East African countries, highlighting the concerned/investigated countries and cities.

A geographical delimitation is necessary as the obstacles and potentials concerning Sustainable Entrepreneurship may vary from country to country (Nziku, 2016).

4.2 Respondents in East Africa

The concept of Quadro Helix is used to ensure all relevant actors are considered in the project. Yet it is decided not to interview any within the actor group of public institutions due to the bureaucratic structure of the countries. Besides, public institutions are not the main focus of this project. Interviews with local communities are challenging to conduct, and therefore interviews with this actor group have not been completed. Thus the focus is to conduct interviews with people within the other two actor groups of Quadro Helix: businesses and knowledge institutions.

4.3 Businesses and micro, small and medium-sized enterprises

The term business can be understood in different ways. In this project, business is meant by an organisation that produces any product or service (Hayes, 2022). Yet, the focus is on businesses producing products with the aim of selling the products. Besides, a business can be for-profit or nonprofit (Hayes, 2022). Organisations producing products for a social course without keeping a financial profit are also considered a business. Additionally, within the context of this research, a business is considered part of the formal sector only if it is legally registered (Deléchat & Madina, 2020).

Micro, small and medium-sized enterprises (MSME) cover companies with respectively less than ten employees, less than 50 employees, and less than 250 employees (The European Commission, n.d.). The research and investigation have been delimited only to consider micro and small enterprises as they are more similar in their organisation than medium-sized enterprises due to their sizes. By excluding enterprises with more than 50 employees, the research can deliver more suitable solutions for obtaining Sustainable Entrepreneurship.

5 Research design

The following section has the purpose of providing an overview of the structure of the report. The section aims to clarify the connections between the analyses and how these contribute to developing recommendations answering the research question. Firstly, the background of the project is described. Secondly, the three analyses are described with a focus on how the methods and conceptual framework are used in the analyses to support answering the research question. Finally, the relation between the analyses is described and how these have led to the recommendations answering the research question. Figure 7 visualises the structure of the project.

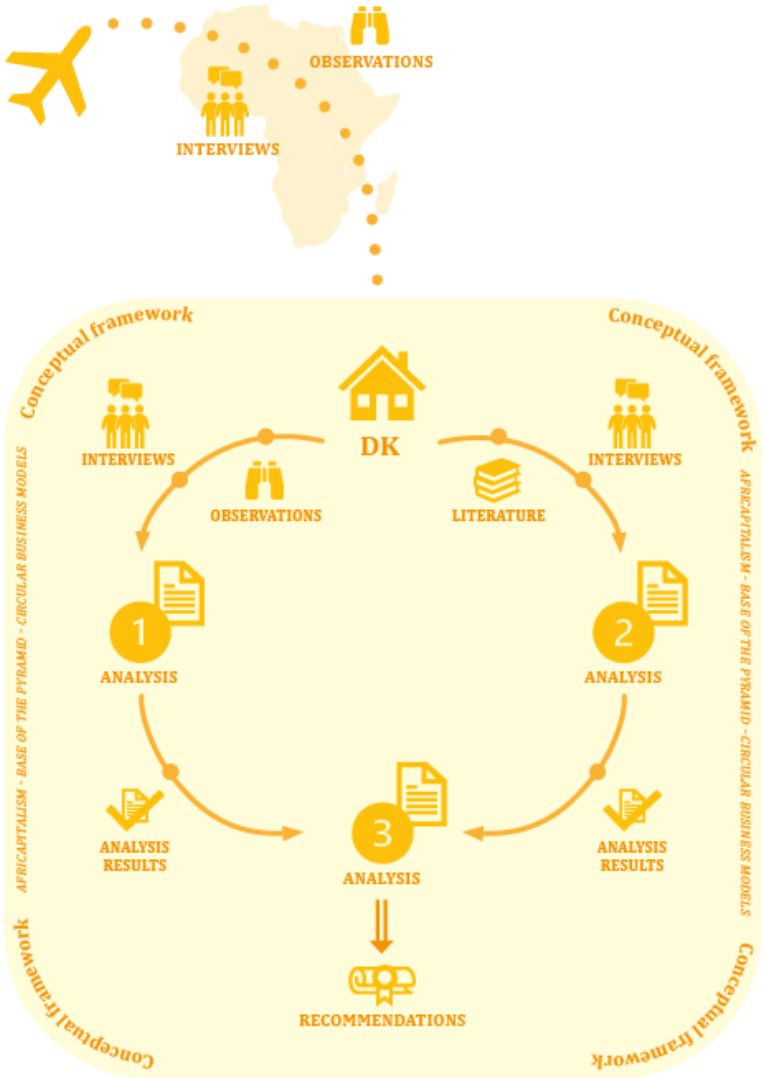

Figure 7: Visualisation of the process of answering the research question

5.1 The initial phase

It is common to have preconceptions prior to events, which impact how the researcher views the world. Both experiences and realisations will likely influence the preconceptions, which typically appear unconsciously. (Thurén, 2008) In order to minimise unwarranted preconceptions in this project, an expedition was conducted to the pertinent locations, allowing for a comprehensive understanding of the challenges and local circumstances. Given the significant cultural and normative differences between East Africa and Denmark, it was crucial to grasp the reality pertinent to this research.

This research is conducted through a pragmatic approach, meaning it is only possible to have knowledge of the reality by actively interacting with it. Thus, people gain knowledge through actions and interactions (Løgstrup, 2020). Therefore, theories cannot be used as an objective foundation for collecting knowledge and other principles about the problem field in the pragmatic paradigm. This is due to the fact that in pragmatism, there does not exist universal truths about a problem field. Instead, there exist *local* truths which only characterise the specific study's problem field (Løgstrup, 2020).
Pragmatism is based upon the idea of choosing methods and theories according to the identified problems and circumstances. Hence, an individual problem field dictates how it should be investigated and analysed and in which scientific paradigm the answer should be found (Løgstrup, 2020). During the journey to East Africa, interviews were conducted, and observations were made to acquire knowledge and gain an understanding of the problem field. These methods proved highly relevant and applicable, given the circumstances and the inherent complexity of the problem field, which encompassed diverse perspectives and opinions.

Due to the pragmatic approach, the journey to East Africa has been indispensable as a practice must be developed while being present in the concerning practice, meaning that practice cannot be developed solely based on theories as one must acknowledge the circumstances (Løgstrup, 2020). Likewise, it is essential to act upon the knowledge gained through the interactions as the pragmatic paradigm dictates that it makes no sense to collect knowledge without using it to improve the reality (Løgstrup, 2020). Consequently, the empirical research conducted in East Africa served as the foundation for the three analyses.

5.2 Mapping of sustainable businesses

In the first analysis, several sustainable businesses in East Africa are mapped as the analysis aims to answer the first sub-question: *What are the experiences with Sustainable Entrepreneurship in existing businesses in East Africa?* To conduct the first analysis, interviews and observations are applied. With these methods, it is possible to obtain the necessary knowledge about the mapped businesses. Besides, the conceptual framework where Sustainable Entrepreneurship is defined is used to assess how well the businesses comply with Sustainable Entrepreneurship. Thus, the analysis provides knowledge of how businesses in East Africa work with Sustainable Entrepreneurship and identifies the gaps for the businesses to comply better with Sustainable Entrepreneurship.

5.3 Mapping of other relevant actors

The second analysis investigates other actors who can improve the possibilities of Sustainable Entrepreneurship in East Africa. The analysis aims to answer the second sub-question: *Which roles do different relevant actors play in enhancing Sustainable Entrepreneurship in East Africa?* The actors are analysed to get an understanding of what they can do to improve Sustainable Entrepreneurship but also where they are inadequate in doing so. The actor groups analysed in the second analysis are chosen based on the Quadro helix perspective. This means that public institutions, knowledge institutions and local communities are investigated. To conduct the second analysis, literature and interviews are used to obtain the necessary information about the actors and how they relate to Sustainable Entrepreneurship. Besides, the conceptual framework and the definition of Sustainable Entrepreneurship are used to understand how these actors enhance Sustainable Entrepreneurship and where they are inadequate.

5.4 Investigation of prospects of Sustainable Entrepreneurship

The third analysis aims to answer the third sub-question: *How can the conditions be improved for Sustainable Entrepreneurship in East Africa?* With this analysis, the previous analyses are converged to investigate and explore ways to improve the conditions for Sustainable Entrepreneurship in East Africa. This analysis is mainly based on the previous analyses supplemented by literature, interviews and observations used to elaborate on the obstacles regarding Sustainable Entrepreneurship and how the actors can improve the conditions. The third analysis summarises roles and initiatives in improving the conditions for Sustainable Entrepreneurship in East Africa and paves the way towards several recommendations.

5.5 Answering the research question

The three analyses all together answer the research question: *How can the prospects of Sustainable Entrepreneurship for communities in East Africa be enhanced?* There exists an interaction within the analyses. The first two analyses are separately answering two different sub-questions that do not have a relation. This means that the second analysis could be answered without the first analysis being answered and vice versa. The third analysis could, on the contrary, not be answered without the first two analyses being done beforehand. The third analysis uses the answers from the first two analyses to pave the way towards answering the research question. To answer the research question, two posters are developed to visualise and clarify recommendations for some actors regarding Sustainable Entrepreneurship. These recommendations are directly answering the research question.

6 Methods

The following section provides a detailed description of the methods employed in this project. Interviews and observations were utilised to gather data, while a systematic literature search was conducted to identify relevant literature about Sustainable Entrepreneurship, thereby bolstering the research findings.

6.1 Interviews

Interviews are conversations with a purpose and are used to gain knowledge about people's perspectives and opinions as well as their lived experiences. The aim is to achieve a deeper understanding of a problem field rather than being able to generalise statistically. The strength of this method is that it can provide first-hand accounts of these perspectives, opinions and lived experiences (Roulston & Halpin, 2022). The responses will typically be subjective: however, when interviewing multiple respondents, the personal perspectives can be combined, which provides a better understanding of a particular problem field (Kvale & Brinkmann, 2015).

A distinction is commonly made between three types of interviews: structured, semi-structured and unstructured. In the structured interview, the interviewer has an interview guide, which is followed thoroughly. In contrast, during a semi-structured interview, the interviewer maintains an interview guide while having the flexibility to pose unplanned follow-up questions. The semi-structured interview offers the advantage of allowing respondents to express themselves while enabling interviewers to ask elaborative and relevant questions during the process. The unstructured interview does not follow an interview guide. It is more related to an informal conversation where the interviewer has a brief set of prompts to ask questions about a particular area of topics, and the respondent responds freely. (Bryman, 2004)

Interviews can be used as the primary source of data but can also be supplemented by other methods, such as observations, to add reliability and validity to the research (Roulston & Halpin, 2022). The interviews can additionally be done in different modalities. The most common is the face-to-face interview, but interviews can also take place through telephones or computers. Likewise, it is possible to both practice synchronous online interviews as well as asynchronous online interviews (Roulston & Halpin, 2022).

6.1.1 The use of interviews

With the practice of using interviews to support the research, it is chosen to use semi-structured and unstructured interviews. The semi-structured interviews were used when the purpose of the interview was clear and when there was a preconception of the respondent. The unstructured interviews were used for the more sudden interviews, where the interviewer had limited background knowledge of the respondent.

The interviews were conducted face-to-face by travelling to Uganda, Kenya and Tanzania. Nine interviews were made; five were in Uganda, two in Kenya and two in Tanzania. The interviews were conducted with relevant actors of Sustainable Entrepreneurship: business owners, experts, professors and students. The interviews were conducted with the following respondents:

- Peter Okwoko and Paige Balcom, owners of Takataka Plastics in Uganda (Appendix A)
- Collins Okello, dean of the Faculty of Agriculture and Environment at Gulu University in Uganda (Appendix B)
- Anywar Collin, a bachelor's student at Gulu University in Uganda (Appendix C)
- Geoffrey Tabo Olok, professor at the Faculty of Science at Gulu University in Uganda (Appendix D)
- Judith Awacorach and Patrick, PhD students at the Faculty of Business and Development Studies at Gulu University in Uganda (Appendix E)
- Grace Kola, administration and community officer at Circular Innovation Hub in Kenya (Appendix F)
- Zablon Wekesa, a circular economy expert in Kenya (Appendix G)
- Cecil Sagawala, owner of Green Composting in Tanzania (Appendix H)
- Sjani Muggenburg, owner of Recycle at OZTI in Tanzania (Appendix I)

6.1.2 Considerations of the use of interviews

Before doing interviews, when doing interviews and when processing the data from the interviews, different considerations must be made. Before doing interviews, it is essential to consider the kind of interview needed to get the most relevant data. It was chosen to do semi-structured and unstructured interviews. With these types of interviews, the outcomes will naturally be different as it is possible to ask additional elaborative questions to each respondent (Roulston & Halpin, 2022). Therefore, the data is less comparable, but this is well fitted with the purpose of the interviews, as the different respondents provided different perspectives on the subject. Besides, it was chosen not to send the interview guides to the respondents before the semi-structured interviews as the data would be more relevant for the research if the answers were not discussed and affected by other people. Before doing the interviews, it is also relevant to consider which respondents to interview. The respondent's position and background were well considered regarding the purpose of the interview. It is also pertinent to consider other factors, such as race, class, gender, language and age, as they can impact the data. Language and cultural understandings can easily affect the data. Therefore, these factors must be considered when making the interview guide, as the interviewer and the respondent must understand the questions equally. This factor became easier to consider and adjust after the first couple of interviews, as the language and cultural understanding are very different in East Africa compared to Denmark.

When practising the interviews, different factors can affect the collected data. Most of the interviews were done in informal settings. Some of the interviews were conducted while walking around and doing observations simultaneously, while others were done at offices. The informal settings have given a more laid-back atmosphere, where the respondent could relax and take the time when answering the questions. Besides, the respondent could be less concerned if their answers were formal and good enough.

Some of the respondents were familiar with the interviewers. One of the interviewers has done interviews with some of the respondents in a previous project, and therefore the interviews felt less formal.

Different considerations must be made when processing the data collected from the interviews. First, it is essential to consider the validity and reliability of the interviews. The interviewers come from very different backgrounds and have other realities than the respondents. Therefore, it must be considered if the interviewers understand the problems addressed by the respondents. To address this issue, background research on the problem field was conducted beforehand to give the interviewers' background knowledge on the problem field. Furthermore, it is important to remember that respondents may occasionally present themselves in a favourable light leading them to deviate from their actual behaviours or even provide false information in certain cases. Therefore, it is essential to compare the collected data with literature that can verify the respondents' claims. Moreover, it must be considered if there are certain things the respondents cannot say to the interviewers because of political reasons and corruption.

The interviews were not recorded due to language barriers, background noises and convenience. Instead, the interviews were documented with notes during the interviews. Therefore when analysing the data, it was considered if the interviewers were affected by how they remembered the situation and if they had some prejudices that could create misunderstandings and misinterpretations.

6.2 Observations

Observations were conducted to get further knowledge on different circular organisations in East Africa. Observation is a method where things, people and their actions are observed instead of explained. It is often used with other methods, such as interviews and literature searches (Aarhus University, n.d.). Compared to interviews, observations give a real-life picture of a phenomenon and are based on what the observer experiences instead of opinions by others. To get the most reliable data, the observer must refrain from affecting the observed phenomenon with their presents. Therefore the observer needs to clarify how the observation should be conducted to get the most accurate observation. Besides, it should be well considered what the purpose of the observation is and choose the right phenomenon to observe and the right place and time to conduct the observation. To improve the quality of the data collected through the observation, notes can be written down during the observation (Aarhus University, n.d.).
Different types of observations exist, and in this project, it is chosen to conduct participant observations. A participant observation is an observation where the observer becomes a part of the observed environment. The advantage of participant observation is that it is possible to understand behaviour, motivations and feelings and how the observed phenomenon navigates in real life (Aarhus University, n.d.).

6.2.1 The use of observations

Four participant observations were conducted in connection with this project: three in Kenya and one in Zanzibar. The observations are used to get an overview of which sustainable organisations exist in different areas in East Africa and how sustainable organisations work in real life. In addition, the observations are used as support for the interviews and literature. The observations were mainly used when interviews were not possible or when more than a few people and organisations were being investigated.

Observation at Kibera in Nairobi

Kibera is the largest slum area in Nairobi. In Kibera, much entrepreneurship is happening, and therefore it was found relevant to investigate sustainable businesses in Kibera. The observation aimed to see which circular initiatives exist and how sustainable businesses can develop and sustain in Kibera. The

most important part of the observation was to understand how Kibera's population uses resources typically considered waste to create a better economy and job opportunities for the locals. The sustainable businesses observed were Art 360, making art of waste, Power Women Group making jewellery of waste and Victorious Craft Group, making different products of bones and horns from animals.
The observation was conducted on the 6th of February 2023, where a local guide showed the observers around Kibera and visited different sustainable businesses. The observation made it possible to meet the sustainable businesses' owners and workers, observe how they make their products, and understand the advantages and obstacles in their businesses. The observation notes and pictures can be found in Appendix J.

Observation at Pallet Café in Nairobi

Pallet Café is a garden café located in Lavington, Nairobi. The café has more sustainable initiatives and houses different sustainable businesses. It began as a café where deaf people, who usually have difficulty finding jobs, get the opportunity to become chefs, servers, etc. Besides the socially responsible part of employing deaf local people, the café is surrounded by sustainable businesses placed in small containers, with the possibility to produce and sell their circular products. Therefore, it is relevant to investigate which sustainable businesses are located at Pallet Café and how they use resources normally considered waste to make new products or produce products with a longer lifetime and less environmental impact. The observed sustainable businesses are Greenthing, which produces and sells products made of sustainable materials and products that can last longer and leave less waste after final use and a local jewellery maker, making jewellery out of used cutlery.
The observation was conducted on the 7th of February, 2023. The observers were walking around in the shops as regular customers. The observation made it possible to see the circular products and how they are being produced and talk with the owners and workers about their businesses. The observation notes, and pictures can be found in Appendix K.

Observation of sustainable businesses in Ngong

Ngong is a city outside of Nairobi where different sustainable initiatives are happening. The observers met with a local circular economy expert, who showed the observers the sustainable businesses in Ngong. The observation aimed to investigate which sustainable businesses exist in Ngong and how these businesses use resources normally considered waste to produce new products. The observed sustainable businesses are Flexi Biogas, making compost and biogas out of food waste from the local market and Ocean Sole, making sculptures out of used flip flops.

The observation was conducted on the 10th of February, 2023, when the observers were visiting sustainable businesses in Ngong. With this observation, it was possible to experience more sustainable businesses in East Africa and understand how they can help minimise waste and create a better economy and job opportunities for the locals. The observation notes, and pictures can be found in Appendix L.

Observation at Kawa Training Center in Zanzibar

Kawa Training Center is an education centre educating young locals to become tour guides or work at hotels. Besides teaching the young locals these subjects, they include sustainability and especially circular economy in their education. They do that by doing clean-ups and using the collected materials to make new products. Besides, they are teaching pupils entrepreneurship skills and letting them go to markets and sell the products they have made. The observation aimed to understand how the young locals are being taught and how it affects their future, including circular economy and the possibility of establishing their own company.

The observation was conducted on the 17th of February 2023, where the observers were shown around in their workshops, lectures and other initiatives Kawa Training Center has implemented. This observation made it possible to understand the knowledge regarding circular economy and entrepreneurship of young locals. Likewise, the observation provided insight into the training and possibilities of more sustainable businesses in East Africa was conducted. The observation notes, and pictures can be found in Appendix M.

6.2.2 Considerations of the use of observations

Three observations in Kenya and one observation in Tanzania were conducted, hence none were made in Uganda. The reason for not doing observations in Uganda is that many relevant interviews were available. Because of the contacts available in Uganda, it was possible to do interviews with five relevant actors, and all of them prioritised the time to do an in-depth interview. However, it can be argued that observations were conducted in Uganda as a part of the interviews, e.g. Peter Okwoko showing around at the production site at Takataka Plastics. Also, in Tanzania, only one observation was conducted. In Tanzania, relevant actors were also available to do interviews, so it was not as necessary to do observations. It can likewise be argued that observations were conducted at Green Composting's compost site and Recycle at OTZI's production site. In Kenya, observations were necessary as relevant actors were unavailable. Therefore, exploring and observing relevant phenomena was necessary to get some data.

As mentioned, the observer must not affect the observed phenomenon when performing an observation, which is difficult in this case, as when doing participant observations, the observers must become part

of the environment. The observers are two Danish females of white ethnicity who stood out within the observed environments. Therefore, it cannot be clear that the appearance of the observers has not affected the observed phenomenon when doing the observations. But the observations may not be affected negatively as the aim of the observations mostly is to experience how the observed phenomena work, and not much subjective feelings and behaviour.

When researching a problem field in countries other than the country the researchers live in, it can be difficult to understand the problem field. Therefore, the researchers chose to live in the countries in the problem field for a short period to be able to do the observations. It can be argued that small observations were conducted every day when driving and walking around in the streets and engaging with the citizens of these countries. It was a huge advantage to understand the problem field in another way by becoming a "local" instead of a foreigner. This has also made it possible to choose the best-fitted observed phenomenons and to find new and sudden phenomena to observe constantly.

6.3 Systematic literature search

A systematic literature search requires an organised and structured search process where all search terms get documented. This additionally provides the research with reproductivity, as anyone with the exact searches would be able to identify the same scientific articles in the concerned databases (Aarhus University, 2022). Furthermore, a systematic literature search can be beneficial when conducting larger reports as it provides an overview of the process of finding literature. Likewise, a systematic literature search can prevent bias and provide the opportunity to find gaps in existing research (Aarhus University, 2022).

6.3.1 The use of systematic literature search

Through the preliminary phase of this project, a systematic literature search is conducted to determine what research has already been conducted on this topic and to gain knowledge about the subject. The template seen in Table 2 is used to structure the systematic literature search. The completed scheme for the systematic literature search can be found in Appendix N.

Table 2 Template for the table structuring the systematic literature search

Database	The words you have searched for – and how (e.g., use of truncation, limiting to specific search fields)	Limitations	The search result	Date	Comments

In the initial phase, a search was conducted in Aalborg University's online library to provide an overview. The initial searches provided additional search words, providing the opportunity for *pearl growth*, where different subject terms were used to expand the literature search.

When the initial search was adequate, a more systematic search was conducted in the databases SCOPUS and ABI/INFORM. SCOPUS is chosen as it is an interdisciplinary database where it is possible to find relevant articles from a broad perspective. ABI/INFORM is selected as it provides pertinent articles within the business and economic field.

In the databases, Boolean operators are used to narrow the search. These are used both to ensure that different spellings and endings of the words are considered. For example: "Entrepreneur AND Entrepreneurship" and "Base of the pyramid OR Bottom of the pyramid". Likewise, the geographic delimitations are considered as the research focus on Eastern Africa. However, the literature research is not exclusively confined to the geographic area as some literature has considered Asia and other developing regions.

The following words are examples that are used to find literature:

- (Green/sustainable/inclusive) Entrepreneurship
- East Africa
- Circular economy
- Social circular economy
- BOP/base of the pyramid/bottom of the pyramid
- Inclusive innovation
- Inclusive economy
- Waste Management

The main interest is to identify the most recent research in the topic area, so the search results are sorted by date, with the latest publications appearing at the beginning.

6.3.2 Considerations of the use of systematic literature search

The articles used in this project are selected based on some considerations, as it is impossible to consider all literature within the field.

As mentioned, specific search terms are chosen to locate relevant literature for the research. The selection of these chosen words and the exclusion of others has influenced the acquired knowledge. Throughout the research process, exposure to new concepts and terms, such as *Africapitalism* and *inclusive innovation*, has allowed for expanded exploration of relevant literature and a refined focus explicitly tailored to this study.

7 Conceptual framework

In this project, it is chosen to define a conceptual framework for Sustainable Entrepreneurship thus, no general theory is used. To create the conceptual framework for Sustainable Entrepreneurship, the term entrepreneurship is defined as well as the three aspects: Africapitalism, Base of the Pyramid (BOP) and Circular Business Models (CBM). The relevant points from the aspects are creating a definition and a measurement method for Sustainable Entrepreneurship.

7.1 Entrepreneurship

Entrepreneurship can be defined in different ways. William B. Gartner (1987) has researched the term entrepreneurship, and he explains that entrepreneurship is a term for building new ventures. Meaning entrepreneurship is when doing a new risky activity in a business. Thereby entrepreneurship happens when the entrepreneur creates a new business or develops an existing one (Gartner, 1987). William B. Gartner (1987) defines entrepreneurship as follows: *"Entrepreneurship is the process of designing and managing dynamic growth strategies for an organisation."*

An entrepreneur is a leading person who establishes a profit or nonprofit enterprise (Gartner, 1987). It can be chosen only to define entrepreneurs in the formal sector or consider entrepreneurs in the informal sector. Eight out of ten workers in Africa are employed in the informal sector (Kiaga & Leung, 2020). Entrepreneurs in the informal sector mean that they work for businesses or have developed their own businesses that are not registered legally, do not pay taxes and are not monitored compared to the legislation (Deléchat & Madina, 2020). This can, for example, be locals who have a small shop selling fruits along the road or farmers selling their products to shops. These types of businesses do not comply with the legislations, policies and do not contribute to the common good of the country's economy. Because such a huge part of Africans work in the informal sector, they are included in this project. Yet this definition of entrepreneurs is not sustainable as they cannot contribute to improving the country's economy, nor can the informal businesses create stronger communities or opportunities for local communities. Therefore, they must be mobilised into the formal sector to become sustainable.

7.2 Africapitalism

Many African entrepreneurs have attempted to develop the continent in a sustainable direction with the recognition of the power of the market. One of these attempts is the definition of *Africapitalism* (Amaeshi

& Idemudia, 2017). Africapitalism seeks to recreate entrepreneurship in Africa and simultaneously reconnect and restore the African-ness in capitalism, reflecting the economic and social practices of African culture and tradition (Amaeshi & Idemudia, 2017).

Africapitalism is a term defined by Tony O. Elumelu, a Nigerian economist (Amaeshi & Idemudia, 2017). The term is an economic philosophy that demonstrates how necessary it is for the private sector to commit to an economic transformation of Africa and that this should be done through investments that can develop both economic growth and social wealth. He likewise argues: "*Africa's renaissance lies in the confluence of the right business and political action*." (Amaeshi & Idemudia, 2017)
Africapitalism aims to rethink capitalism by focusing on the development of business leaders, investors and entrepreneurs in Africa, and it can also be a possible management idea as a counter measurement for capitalism. The situated contextualisation of Africapitalism differentiates it from global capitalism (Amaeshi & Idemudia, 2017). Likewise, in economic terms, Africapitalism does not exclude self-enrichment but obligates the rich to improve the community. Hence, the economic and social power is calculated regarding the economic empowerment of others, meaning that in Africapitalism, the firms are considered communities rather than a numeral of individuals (Amaeshi & Idemudia, 2017). "*In a community the individual does not pursue the common good instead of his or her own good; rather pursues his or her own good through pursuing the common good*". (Amaeshi & Idemudia, 2017) Meaning that the ultimate goal of self-enrichment from an africapitalistic perspective is to develop the community, leading to a common good (Amaeshi & Idemudia, 2017).

Amaeshi & Idemudia (2017) argue that Africapitalism consists of four possible principles: *sense of progress and prosperity, sense of parity, sense of peace and harmony, and sense of place and belonging.* Within the principle of progress and prosperity lies the pursuit of financial profitability while creating social wealth. Hence, progress and prosperity move beyond materialistic goods and consider human well-being in business models. Thus, progress and prosperity not only involve the absence of poverty but provides the conditions to make life more meaningful with access to, for example, education, health and social capital (Amaeshi & Idemudia, 2017).

Within the principle of sense of parity lies the importance of an equal share of the benefits of progress and prosperity. Hence, it is essential that wealth does not get lopsided. Africapitalism recognises that economic growth must be inclusive. This promotes entrepreneurship that seeks to contribute to financial and social wealth for all parties involved (Amaeshi & Idemudia, 2017).

Within the principle of peace and harmony lies the search for the generation of economic growth and social wealth and, therefore, the search for balance, harmony and peace. There should be a balance between economic growth and social wealth, as well as a balance between the impacts of production and consumption on the environment, society, and economy. As mentioned, creating social wealth arises when it creates profit for all stakeholders rather than only the shareholders, recreating harmony and balance (Amaeshi & Idemudia, 2017).

The last principle that Amaeshi & Idemudia (2017) defines is the principle of sense of place and belonging. The importance of space is prioritised in Africapitalism in contrast to globalised capitalism, which prioritises cost instead, which often results in outsourcing. Globalisation underestimates the value of place and instead promotes "placelessness" (Amaeshi & Idemudia, 2017). The characteristics of each of the four principles are listed in Table 3 below.

Table 3 Characteristics of the four principles of Africapitalism

	Sense of progress and prosperity	**Sense of parity**	**Sense of peace and harmony**	**Sense of place and belonging**
Characteristics	Generating both economic growth and social wealth	The importance of an equal share of the benefits	Generating both economic growth and social wealth	Prioritisation of place and context rather than costs
	Including human well-being	Wealth does not get lopsided	A balance between economic growth and social wealth	
	Providing the conditions to make life more meaningful	Economic growth must be inclusive	A balance between the impacts of production and consumption on the environment, society, and economy	
		Promotes entrepreneurship that seeks to contribute to both financial and social wealth for all the involved parties	Creates profit for all stakeholders rather than only the shareholders	

Africapitalism is established by both the value of sense of place and rootedness. Africapitalism aims to reinforce the connection between place and economy on one side, and on the other side, between place and self-identity. Africapitalism seeks to address the root of the issues instead of only recognising the issues of owner wealth maximisation (Amaeshi & Idemudia, 2017).

7.3 Base of the Pyramid

BOP is a group consisting of four billion people living in extreme poverty. Depending on the source, this group of people live on less than $2,000 annually. Most of these people are living in South Asia, Eastern Europe, The Caribbean, Latin America and Africa (Pervez et al., 2013).
One scholar who has dealt with this topic is C. K. Prahalad. As BOP has to be elevated, Prahalad suggested entering the BOP market and *finding fortune in the BOP community* (Prahald & Hart, 2002). According to Prahalad and Hart (2002), these BOP markets are a multi-trillion-dollar industry, especially for multinational enterprises (MNEs), because of the significant number of potential customers.

However, the perception of the BOP markets depends on the literature. Borchardt et al. (2020) have done a literature review and argue that there exist four perceptions on BOP markets, namely: BOP 1.0: *finding fortune at BOP,* BOP 2.0: *creating fortune at BOP,* BOP 3.0: *sharing fortune with BOP*, and BOP 4.0: *enabling fortune with BOP.*

The profit-making perspective is primarily pronounced in BOP 1.0, where the inequity is aggravated, bringing along environmental degradation as the perspective is solely profit-making. Thus, businesses tend to be more profit-orientated and interested in capturing markets at the expense of accomplishing partnership ventures for BOP communities. The businesses' primary focus is thus to increase their markets (Borchardt et al., 2020).

The perception of BOP 2.0 considers a value chain perspective where the fortune is created due to the idea of creating value. The value can emerge from joint activities and through interaction and is made in the exchange of resources which support solving common problems. Hence, BOP communities must not only relate to the businesses as customers but can also appear as designers, suppliers, distributors and service providers (Borchardt et al., 2020).

In BOP 3.0, it is assumed that businesses share their wealth with BOP communities, meaning that businesses usually undertake government functions, such as welfare (Borchardt et al., 2020).

The value commitment perspective is primarily pronounced in BOP 4.0, which focuses on uplifting local communities while acknowledging the diversity of cultures and natural systems. The perception of BOP 4.0 suggests that by using resources and knowledge, BOP communities can be developed based on their local contexts, which can reduce poverty. Meaning it is possible to provide dignity to BOP and share

knowledge through value chains to solve social and ecological challenges. Enabling fortune can be secured by local entrepreneurship.
Establishing trust-based partnerships between BOP communities, local businesses, NGOs, and multinational businesses is necessary to surmount scalability issues. Likewise, to guarantee that the local knowledge within BOP communities is not threatened by the powerful larger companies (Borchardt et al., 2020).

The profit-making perspective recognises BOP communities as consumers. However, it is argued that to elevate the BOP and handle poverty issues, BOP communities must be recognised as producers. This means instead of merely selling to them, the focal point should be on buying from the BOP, making them producers (Pervez et al., 2013).
When utilising the BOP as producers or entrepreneurs, rather than only considering them as consumers, provides a better opportunity to elevate them from poverty while simultaneously creating an economically sustainable business model (Pervez et al., 2013).

7.4 Circular Business Models

The concept of circular economy is an economic system based on the principles of refuse, reuse, recycling, and regeneration to keep resources in use for as long as possible, reducing waste and minimising environmental impacts. CBM is designed to achieve the principles of the circular economy by maximising the use of resources, minimising waste, waste as resources and creating economic value. CBM are an essential aspect of the circular economy since they enable businesses to elevate from the traditional linear business model based on the take-make-dispose approach towards a more sustainable model (Geissdoerfer et al., 2018a).

CBM can have a different perspective regarding focusing on the loops within the biological or technical dimension, such as illustrated through the Butterfly Model by Ellen McArthur Foundation, found in Figure 8. Further, CBM can focus on loops relating to part manufacturing, product manufacturing and service providing (Ellen Macarthur Foundation, 2019).

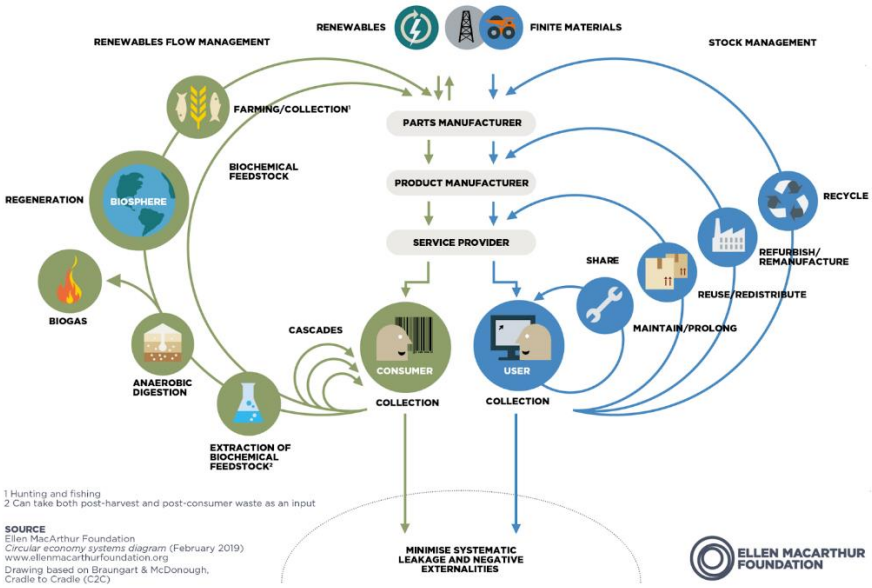

Figure 8 Illustration of the Butterfly Model consisting of biological and technical loops. Illustrated by (Ellen Macarthur Foundation, 2019)

Various strategies exist to work with circularity and minimise waste and natural resource usage within CBM. As shown in Figure 9, the 9Rs are a way to rank strategies according to their circularity levels and are a measure of how well a strategy keeps materials in use within the production chain (Potting et al., 2017).

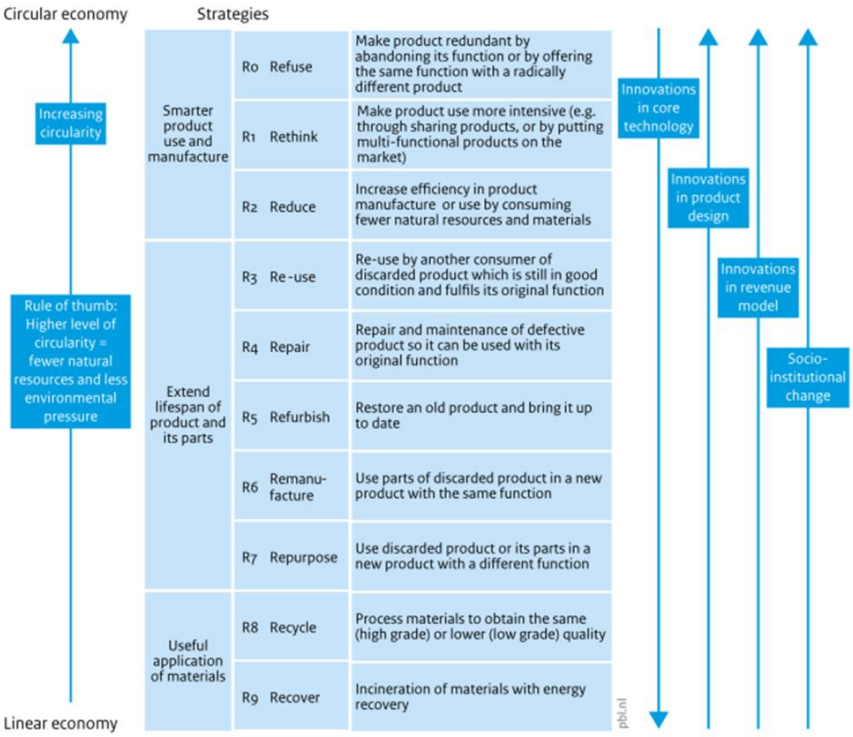

Figure 9: Illustration of the ten circularity strategies referred to as the 9Rs. Here in order of priority. Illustrated by (Potting et al., 2017).

Firstly, it is preferable to enhance efficient manufacturing and product usage techniques, such as product sharing, which achieve high circularity levels by allowing products to be used for longer periods or by more people. Secondly, extending the product's lifetime is the second best option, followed by recycling to recover materials. Incineration has the lowest circularity priority as it recovers energy from waste but renders materials unavailable for other products. Overall increased circularity leads to more environmental benefits (Potting et al., 2017).

Increasing the circularity of a product chain allows the materials to remain in the chain for longer and be used again after a product is discarded. This reduces the need for new materials to be extracted and produced which are beneficial for the environment. However, there can be exceptions to this. For instance, increasing circularity may increase the consumption of (fossil) fuels, as in the case of the chemical recycling of contaminated plastics. Intensifying product use, such as through product sharing, may also lead to unintended additional forms of use. For instance, car-sharing may encourage people who do not own cars to drive more frequently. Therefore, it is essential to examine the possibilities of rebound or secondary effects (Potting et al., 2017).

Overall, increasing circularity in a product chain reduces the consumption of natural resources and materials, resulting in fewer environmental effects both within and outside the product chain (Potting et al., 2017). CBM can therefore be seen as a subcategory or generic strategy for sustainable business models by creating environmentally sustainable value, long-term perspective and narrowing resource loops (Geissdoerfer et al., 2018b).

7.5 Sustainable Entrepreneurship

In this section, Sustainable Entrepreneurship will be defined based on Africapitalism, BOP and CBM. As entrepreneurship has already been defined, the focal point of this section is to determine when entrepreneurship is sustainable. This depends on the presence of the three sustainability pillars: economically, environmentally, and socially sustainable.
Africapitalism, BOP and CBM are three parameters, which include the three sustainability pillars, when combined, meaning that when all three parameters are present, entrepreneurship will be defined as sustainable. However, there are different levels of the presence of the parameters, hence sustainability is graduated in that regard. The following Figure 10 visualises the importance of the three parameters' presence in the constitution of Sustainable Entrepreneurship.

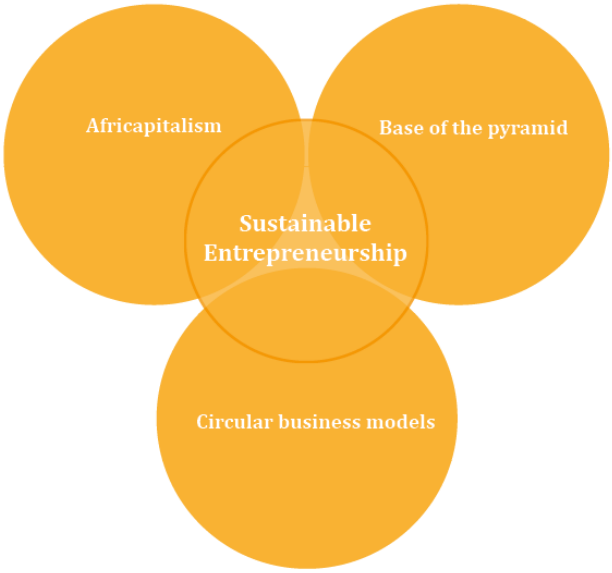

Figure 10: Illustration of the three parameters and how they, in combination, constitute Sustainable Entrepreneurship.

To determine the graduation, several elements are selected. The characteristics that apply to Africapitalism are the four principles: *sense of progress and prosperity, sense of parity, sense of peace and harmony, and sense of place and belonging.* The level of sustainability depends on the presence of the characteristics. It is worth mentioning that all of the four principles must be present before the phenomenon can exist. Still, the more characteristics present in each principle, the more Sustainable Entrepreneurship is.

The parameters which apply to BOP communities are the four types of perception: BOP 1.0: *finding fortune at BOP,* BOP 2.0: *creating fortune at BOP,* BOP 3.0: *sharing fortune with BOP*, and BOP 4.0: *enabling fortune with BOP.* The level of sustainability increases as the number increases, meaning that the best conditions for sustainability occur in BOP 4.0, while the worst conditions occur in BOP 1.0.

The parameters that apply to CBM are the ten circularity strategies within the production chain. The strategies are prioritised, so the most sustainable strategy has the lowest number, i.e. R_0 *Refuse*, while the least sustainable strategy has the highest number, i.e. R_9 *Recover*, see Figure 9. As this parameter has ten levels, while the other two parameters only have four, the parameters of CBM are clustered to have four parameters. Level 1 and the least sustainable level in the parameter of CBM include R_9 *Recover* and R_8 *Recycle*. Level 2 includes R_7 *Repurpose,* R_6 *Remanufacture,* and R_5 *Refurbish*, and level 3 includes R_4 *Repair* and R_3 *Reuse*. Level 4, the most sustainable level, includes R_2 *Reduce*, R_1 *Rethink* and R_0 *Refuse*.

The following Figure 11 is used to determine entrepreneurship's sustainability level based on the parameters.

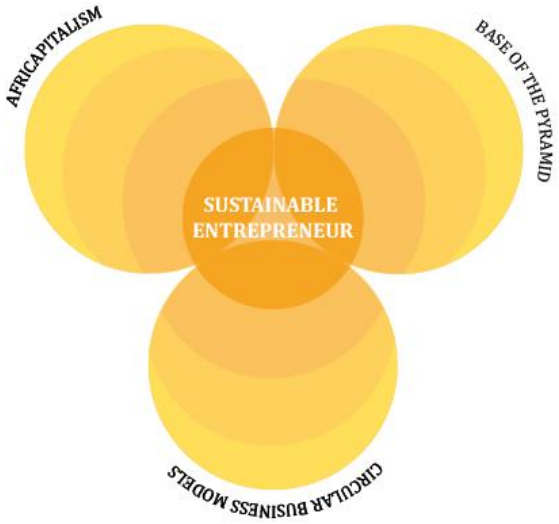

Figure 11: Illustration of how the three parameters are graduated into four levels each.

7.5.1 The use of Sustainable Entrepreneurship

The described definition of Sustainable Entrepreneurship, consisting of CBM, BOP and Africapitalism, has a fundamental role in the report. In the first analysis, the assessment tool and the corresponding figure are used to assess the level of sustainability in different sustainable businesses. Here the definition of Sustainable Entrepreneurship is paramount to figuring out where the mapped businesses are lacking. In the second analysis, the definition of Sustainable Entrepreneurship is used to evaluate which actors can participate in improving Sustainable Entrepreneurship. Besides, Sustainable Entrepreneurship is used to find the gaps for the actors to enhance Sustainable Entrepreneurship. Finally, in the third analysis, Sustainable Entrepreneurship is used to develop recommendations on how to improve the elements of CBM, BOP and Africapitalism.

The defined term of Sustainable Entrepreneurship is thus an essential tool as it has paved the way for the recommendations constructed in this project. This conceptual framework consisting of the definition of Sustainable Entrepreneurship has thereby shaped this project.

7.5.2 Considerations of the use of Sustainable Entrepreneurship

The three concepts, Africapitalism, BOP and CBM, are used to define Sustainable Entrepreneurship. BOP and CBM are two common concepts in academic literature. Therefore, there are many different definitions of the concepts. The definitions used in this project are the ones found to be most measurable. For CBM, the definition of the 9Rs is chosen, but the 3Rs, Waste Hierarchy etc., are other relevant, quantifiable definitions. The reason for choosing the 9Rs is to include the levels regarding resources, i.e., refuse, rethink, and reduce.

The parameter of BOP is chosen since many from BOP live in Africa; therefore, this part of the population must be mobilised particularly (Aguilar et al., 2021). It depends very much on the context, which is Africa. The same applies to the last parameter, Africapitalism, as this economic ideology surrounds Africa in particular. Africapitalism is chosen because it fits well with the other parameters and is a very inclusive and uplifting economic conviction. However, other economic ideologies, such as ecological economy, could also have benefitted the project.

8 Mapping of sustainable businesses

A mapping of the sustainable businesses investigated in this project is conducted to answer the first sub-question: *What are the experiences with Sustainable Entrepreneurship in existing businesses in East Africa*? The analysis aims to examine different sustainable businesses in East Africa to determine which parameters are most explicit and, thus, how sustainable businesses can improve. The analysis is divided into six sections describing each of the five mapped businesses, including a sixth section where five smaller sustainable businesses are mapped together. The mappings include an introduction to sustainable businesses and assessments of how well the businesses fit in the definition of Sustainable Entrepreneurship, see section 7.5. The analysis is built upon interviews and observations performed with the businesses.

8.1 Takataka Plastics

In 2020, Peter Okwoko and Paige Balcom partnered to develop Takataka Plastics. Takataka Plastics is a social business located in Gulu, Uganda, where they recycle plastic waste, mostly PET (Appendix O), to produce construction tiles. The reason for establishing the business was the number of plastic bottles in nature in Gulu and the creation of employment opportunities, especially for at-risk youth. Takataka Plastics get plastic bottles from open containers that they have placed around the city, where the locals deliver their plastic bottles, and Takataka Plastics collects them. Some members of the community also collect the bottles and sell them to the facility (Appendix A). Figure 12 shows pictures from Takataka Plastics' production site.

Figure 12: Pictures from Takataka Plastics' production site in Gulu.

8.1.1 Assessment of Sustainable Entrepreneurship in Takataka Plastics

Takataka Plastics specialises in recycling plastic waste from the local community, emphasising transforming waste into "need-to-have" products such as bathroom tiles. To guarantee the quality of the recycled products, Takataka Plastics ensures not to mix different types of plastics (Appendix A). The separation of the plastic types would likewise prolong the lifetime of the new products and their ability to be recycled. Denmark's waste management system inspired the co-owner Okwoko during his studies abroad which motivated him to work towards improving the management system in Gulu. (Appendix A). Okwoko elaborates:

> *"My passion for recycling plastic came from seeing how clean Denmark was and how they handled the plastic when I studied in Denmark. When I came back to Gulu, I saw all the plastic waste, especially the bottles, either burned in nature or at the dump site. Therefore I wanted to do something about it."*
> (Appendix A)

Thereby Takataka Plastics ensures that plastic bottles have a new purpose by recycling them into new products.

Okwoko is a local entrepreneur with a bachelor's degree from Gulu University and a master's degree from Aalborg University in Denmark. He is additionally co-founder of a community-based organisation that works with young people living in the streets in Gulu. Takataka Plastics began in 2020 and currently has 40 employees, of which 15 have been living in the streets of Gulu and now have got an opportunity to change their life, and 12 are women (Appendix A). Takataka Plastics has been supported mainly through grants and prizes from business competitions. However, the business is owned by Okwoko and Balcom, with no investors having a part of the profit (Appendix A).

Takataka Plastics' products are affordable for the local community and are "need-to-have" products. The products can also be exported and sold on markets outside of Gulu and Uganda. In general, there is a market for Takataka Plastics products as it is the only business that currently knows how to recycle PET in East Africa (Appendix A). Therefore, Takataka Plastics is located high according to the BOP parameter as the business is owned by a local who employs young people from BOP communities. Besides, Takataka Plastics is creating benefits in the local community as resources usually considered waste are being used in new products. Therefore the waste is now used positively by profiting from the resource. In addition, plastic bottles have a health risk for the community and could have a societal cost over time (Appendix A)

Takataka Plastics can be defined as a social enterprise, meaning the primary purpose of the business is to create social success instead of only profit for the investors and owners. This is illustrated through local production and affordable product prices. It can therefore be argued that Takataka plastics also embody elements of Africapitalism. Additionally, their waste collection contributes to cleaning the streets and minimising health risks (Appendix A). These elements share similarities with the principle of Africapitalism: a *sense of peace and harmony*, as they seek to balance the economic and social aspects. As mentioned, Takataka Plastics mainly employs people from the local community, including some young people from the streets. At Takataka Plastics, they want to include people that generally would not get a chance and try to develop their skills through work at the business (Appendix A). This relates to two principles of Africapitalism: a *sense of progress and prosperity* & *sense of parity* as they seek to create meaningful conditions through education and enhance social wealth for involved parties.

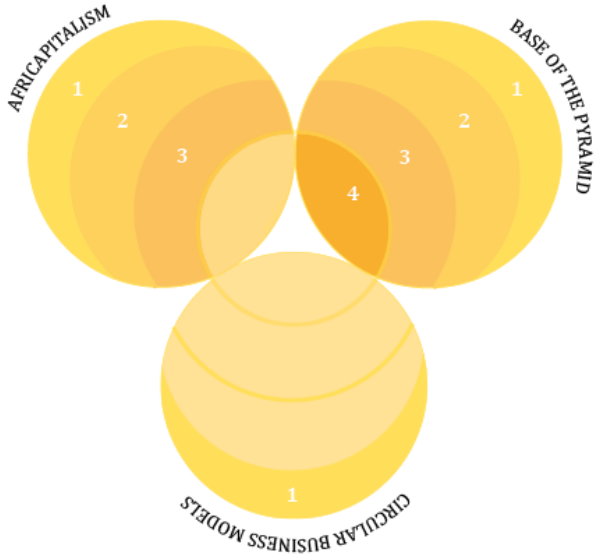

Figure 13: Illustration of the levels obtained by Takataka Plastics regarding Sustainable Entrepreneurship.

Figure 13 shows that Takataka Plastics are assessed to be at level 3 of Africapitalism as they include three principles of Africapitalism. Takataka Plastics is assessed to be at level 4 of BOP as a local entrepreneur develops the business, creates employment for the locals and produces products that can be sold locally and internationally. Yet at the CBM parameter, Takataka Plastics are assessed to be at level 1 as they recycle material into a new product. Thereby, Takataka Plastics is located high on the social and economic sustainable parameters but has space for improvements regarding the environmental parameter.

8.2 Ocean Sole

In 2005, Julie Church founded Ocean Sole, which repurposes flip-flops to make sculptures. The business is located in the Karen area in Nairobi, Kenya, where production and selling happen. At the location, the pupils are also educated in circular topics. Ocean Sole's products are sold to tourists or wealthy locals (Appendix L). Figure 14 shows pictures from Ocean Sole's production site.

Figure 14: Pictures from Ocean Sole's production site in Ngong

8.2.1 Assessment of Sustainable Entrepreneurship in Ocean Sole

Ocean Sole repurposes the collected flip-flops from the ocean, dumpsites, and nature into different-sized sculptures. When making larger sculptures, Ocean Sole is additionally repurposing styrofoam from insulation, limiting their use of virgin materials. Likewise, the residue from the flip flops is used to make mattresses donated to refugee camps, meaning that every resource is fully utilised (Appendix L). The sculptures that Ocean Sole is making are "nice-to-have" products, as they do not replace the need for another product.

The founder of Ocean Sole, Julie Church, is American and does not come from the BOP communities. Yet she has developed a business in Nairobi that impacts BOP communities by creating employment opportunities. Ocean Sole makes positive economic impacts for around 1000 low-income Kenyans, both men and women, as they are directly employed in the business or indirectly employed by collecting flip-flops for the business. Approximately 100 of the 1000 affected Kenyans are directly employed and thereby have secured a steady income. Besides the salary, the employees get bonuses, and Ocean Sole creates welfare programs for the employees and their families (Ocean Sole, n.d.).

At Ocean Sole, they try to create awareness about entrepreneurship and circular economy by inviting schools to visit the production site and let them try making jewellery out of flip-flops (Appendix L). Thereby, the pupils learn that it is possible to create a business by using resources usually considered waste. However, Ocean Sole is not initiated by BOP communities, and the products they produce are "nice-to-have" products with a price range that are not affordable for BOP communities.

Ocean Sole tries to generate social and environmental "wealth" along with their economic wealth as the business, besides their productions, creates awareness about reusing and recycling through their education program. Besides learning the possibility of creating a business case out of waste, the pupils and employees learn about recycling and the importance of considering waste a resource (Appendix L). Furthermore, Ocean Sole provides meals, healthcare, fair salaries and education for their employees and their families, which illustrates the inclusion of human well-being and provides conditions for a more meaningful life (Ocean Sole, n.d.). The focus on generating wealth beyond the economy shares similarities with the principle of Africapitalism: *sense of progress and prosperity.*

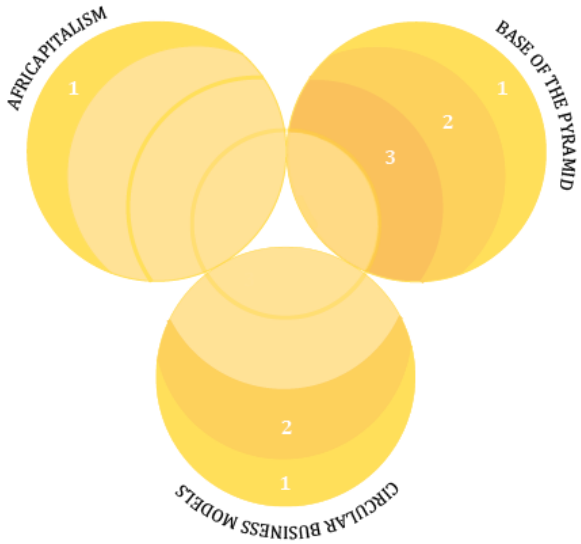

Figure 15: Illustration of the levels obtained by Ocean Sole regarding Sustainable Entrepreneurship.

Figure 15 shows that Ocean Sole is assessed to be at level 1 at Africapitalism as the business integrates one of the principles from Africapitalism. At CBM, Ocean Sole is assessed at level 2 as products are re-purposed into new products. Finally, regarding BOP, Ocean Sole is assessed to be at level 3 as they create employment opportunities for BOP communities, help the local community socially and economically and teach about the opportunity to generate an income from "waste". Thereby, Ocean Sole has space for improvement in both the social, economic and environmental parameters to become a more sustainable business.

8.3 Flexi Biogas

Flexi Biogas is a Kenyan business founded in 2011, with its head office in Nairobi. The business develops and sells tools to make farming in rural areas more accessible. Besides, Flexi Biogas established production sites for compost and biogas, where the visited production site is located in Ngong outside of Nairobi (Flexi Biogas, n.d. a). The products are sold to larger businesses or locals who want to farm vegetables or other crops (Appendix L). Figure 16 shows pictures from Flexi Biogas' production site.






Figure 16: Pictures from Flexi Biogas' production site in Ngong

8.3.1 Assessment of Sustainable Entrepreneurship in Flexi Biogas

At Flexi Biogas, food waste is used to produce compost and biogas. The usage of food waste for biogas and compost is respectively considered recovery and recycling. Both compost and biogas are "need-to-have" products, considering the low crop yields in the western part of Kenya and the need for energy (Okalebo et al., 2005). The compost and biogas can only be utilised once, but the compost is a catalysator for more fertile soil. Flexi Biogas additionally sorts out non-compostable waste such as plastic and glass (Appendix L).

Flexi Biogas is founded locally in Kenya, close to the BOP community. The business began by making it easier for the farmers in the rural areas of Kenya to produce biogas and compost. Thereby, Flexi Biogas sells machinery and provides education on producing biogas and compost. At the Flexi Biogas site in Ngong, only local men are employed. The compost and biogas are sold to locals who want to farm vegetables or other crops, as the export expenses would be too high to fit in an international market (Appendix L).

The compost and biogas at Flexi Biogas' site in Ngong are produced out of food waste from the local food market. A significant focus in Flexi Biogas is on local production, employment, and resale, which is also shown in their biogas process, which they describe as follows:

"*All our plants are designed with the operator in mind – simple to understand and operate. Feed one end, a turn or two of the agitation wheel, and the system does the rest. Gas is piped directly to the point of use, and "Ready To Use" bio-tea automatically overflows from the opposite end into a collection tank.*"
(Flexi Biogas, n.d. b)

The priority of the operator's role in the process design illustrates inclusiveness, as simplifying their system makes it easier for everyone to produce compost and biogas. Furthermore, Flexi Biogas' products are sold to locals who wish to grow crops or vegetables, which generally would be difficult in the area as the soil in Kenya is not well-fitted for farming (Appendix L). It can, therefore, be argued that Flexi Biogas shares elements of Africapitalism in terms of the principle: *sense of peace and harmony* as they seek to balance the economic, environmental, and social aspects through recycling food waste, accessibility, and bettering farming conditions.

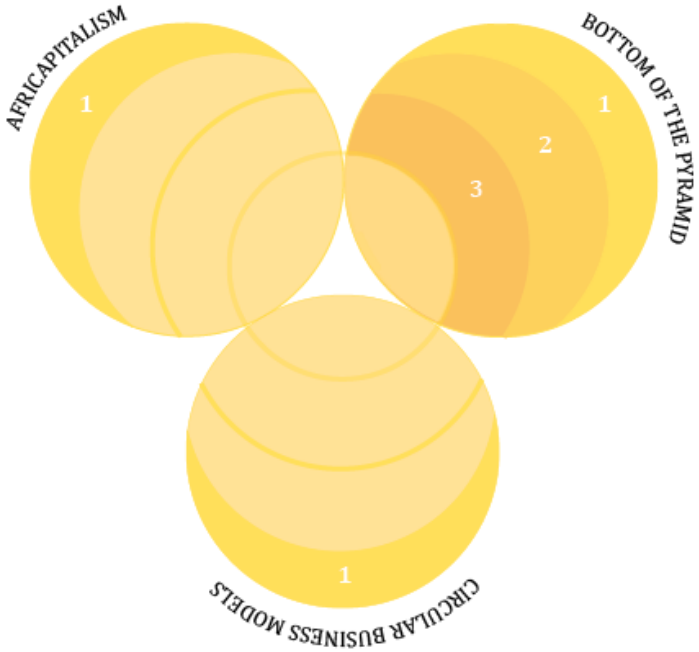

Figure 17: Illustration of the levels obtained by Flexi Biogas regarding Sustainable Entrepreneurship.

Figure 17 shows that Flexi Biogas is assessed to be at level 1 at Africapitalism as they only include one of the principles from Africapitalism. At CBM, they are assessed to be at level 1 as they are either recovering or recycling the resources. Regarding BOP, Flexi biogas is assessed to be at level 3 as the business includes BOP communities as producers and sells their products locally. Thereby, Flexi Biogas have elements from Sustainable Entrepreneurship, but there is space for improvement in both the social, economic and environmental parameters.

8.4 Green Composting

Green Composting is a business located in Zanzibar, Tanzania, that produces compost from organic waste, such as food- and garden waste. Cecil Sagawala founded the business in April 2022. He got the idea of establishing the business when ZURI ZANZIBAR Hotel contacted him about finding a solution to recycle their garden waste. Sagawala used his skills to design a compost production site at one of the compounds of ZURI ZANZIBAR Hotel. He trained the hotel employees to separate the garden and food waste. Afterwards, the garden and food waste are transported to the production site and produce compost for ZURI ZANZIBAR Hotel. Sagawala has further developed the business and is now collaborating with more hotels and has opened more production sites at Zanbluu Beach Hotel, TUI Blue Beach Hotel, RIU Hotels, Emerald Hotel, Mzima House, Zanzibar Flower, Jungle Paradise, Le Mersenne Beach Resort etc. Figure 18 shows pictures from one of Green Composting's production sites.

Figure 18: Pictures from Green Composting's' productions site in Kendwar Zanzibar

8.4.1 Assessment of Sustainable Entrepreneurship in Green Composting

The core of Green Composting is to recycle food and garden waste produced by hotels. The local hotels have a lot of food and garden waste that they do not use, allowing Green Composting to use it for recycling. Composting is a "need-to-have" product, given that the soil is relatively dry in Tanzania, thus, composting provides the opportunity to grow crops locally (African Development Bank Group, 2022). However, compost can only be utilised once but will give longer results from the fertile soil.

Sagawala is a local entrepreneur from Tanzania who has grown up in a BOP community. The produced compost is either given back to the hotels, offered for free to the local community or sold to businesses that need compost. Sagawala believes that he has a good impact on the local economy. Besides, he is teaching the locals how to produce compost, thus creating awareness about the waste issues and how the locals can use food and garden waste to make it profitable for themselves. Green Composting has ten employees from mainland Tanzania and Zanzibar (Appendix H).

As mentioned, some compost is returned to the hotels or the local community. Thus, it can be argued that Green Composting tries to balance the environment and economy. Through this deal, the hotels and locals reduce the use of industrial-produced fertiliser. Green Composting creates economic and environmental benefits and profit for all *stake*holders rather than only the *share*holders. This shares a similarity with the africapitalistic principle: *sense of peace and harmony*.

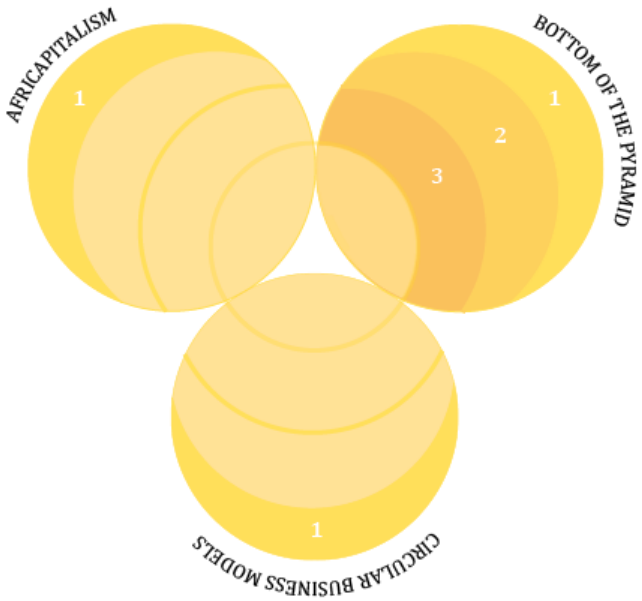

Figure 19: Illustration of the levels obtained by Green Composting regarding Sustainable Entrepreneurship.

Figure 19 shows that Green Composting is assessed at level 1 at Africapitalism as they only include one of the four principles. Besides, Green Composting is assessed at level 1 at CBM as they recycle materials into new products. Regarding BOP, Green Composting is assessed to be at level 3, as the business is developed by a local Tanzanian and provides employment opportunities for the locals. Thus, there are opportunities for enhancement in the social, economic and environmental parameters for Green Composting.

8.5 Recycle at OZTI

Recycle at OZTI is a nonprofit social enterprise founded by Sjani Muggenburg in 2018 in Zanzibar, Tanzania. The business was developed because of the obvious problem with plastic waste in Zanzibar. Therefore, Muggenburg wanted to do something about all the plastic waste in nature. The business is a part of the larger business OZTI East Africa that sells kitchen supplies. Muggenburg is from South Africa but has lived in Zanzibar for over 20 years. Recycle at OZTI is recycling HDPE plastics into new products such as keychains, lamps and pots (Appendix I). Figure 20 shows pictures from OZTI's office.

Figure 20: Pictures from Recycle at OZTI's production site in Zanzibar.

8.5.1 Assessment of Sustainable Entrepreneurship in OZTI

Recycle at OZTI is built upon recycling plastic into new products, primarily souvenirs. The plastic recycled is HDPE plastic (Appendix O) from bottle caps, and liquid containers, e.g. bigger soap containers etc. The plastic used at Recycle at OZTI is collected from hotels, nature and sometimes other connections such as Zanrec[2] (Appendix P). The recycling facility of Recycle at OZTI is a zero-waste workshop, meaning they use all the residual materials from producing their products. At Recycle at OZTI, the plastics are used to produce mainly "nice-to-have" products, but Muggenburg wishes to expand the production to "need-to-have" products such as beams for roof constructions. However, Muggenburg attempts to recycle what is possible, but currently, she only has the machinery to recycle HDPE.

Muggenburg is South African and has not grown up in a BOP community. Yet she has lived in Zanzibar for over 20 years and is familiar with the problems dominating BOP communities. The products Recycle at OZTI produces are aimed at tourists due to the price range and the marketing strategy. The employees at Recycle at OZTI are all locals coming from BOP communities. As a part of Recycle at OZTI, they also have a women empowerment program, where women from BOP communities are equipped with tools to collect, wash and cut HDPE plastic and sell it to Recycle at OZTI. Currently, 50 women are in this program and learning to be entrepreneurs.

The women empowerment program gives the local women the tools and knowledge to collect plastic in nature and clean it. Furthermore, the women get linked up with hotels in the area so the women can collect plastic from there. Recycling at OZTI is a nonprofit business, meaning social and environmental improvements are prioritised higher than profit. By having this women empowerment program as a part of the core of their business, Recycle at OTZI embrace several principles of Africapitalism in terms of the three principles *Sense of progress and prosperity*, *Sense of peace and harmony* and *Sense of place and belonging*.

[2] Zanrec is a waste collection company in Zanzibar, collecting waste from hotels and the local community (Zanrec, n.d.).

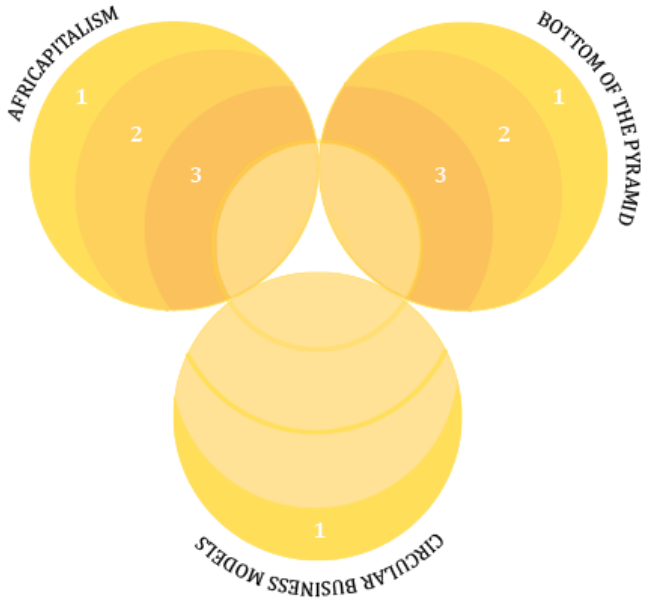

Figure 21: Illustration of the levels obtained by Recycle at OZTI regarding Sustainable Entrepreneurship.

Figure 21 shows that Recycle at OZTI is assessed to be at level 3 at Africapitalism as the business includes three out of four principles. Besides, Recycle at OZTI is assessed to be at level 1 at CBM as they recycle a material into a new product. At BOP, Recycle at OZTI is assessed to be at level 3 as Recycle at OZTI is creating well-paid employment opportunities for BOP communities. This means that Recycle at OZTI includes elements from Sustainable Entrepreneurship, which can inspire other entrepreneurs to work with sustainability. Yet there are opportunities for improvement at Recycle at OZTI in both the social, economic and environmental parameters of Sustainable Entrepreneurship.

8.6 Other smaller sustainable businesses

Through the data collection in East Africa, different smaller sustainable businesses are visited to investigate how they are established and can be further developed. In the slum area, Kibera, located in Nairobi, local entrepreneurs are developing small sustainable businesses with the purpose of using resources typically considered waste to get a financial income. An art studio called Art 360 is giving the youth in Kibera an opportunity to make art out of waste and afterwards sell the products in their shop. Power Women Group is giving HIV-positive women an opportunity to make products such as pearls made out of old magazines and sell these products in their shop. Victorious Craft Group uses animal leftovers as horns and bones to create new products such as jewellery, saltshakers and keychains (Appendix J).

Smaller sustainable businesses are also seen elsewhere in Nairobi, e.g. at the Pallet Café; containers are placed to allow entrepreneurs to try to sell their products. At the Pallet Café, Greenthing sells products made to last longer or made from more sustainable materials. Besides, a jewellery maker has a shop at the Pallet Café where he makes jewellery from old cutlery (Appendix K). These sustainable entrepreneurs are seen in many places in East Africa, but the sustainable businesses are not developed enough and are therefore analysed together. Figure 22 shows pictures from other smaller sustainable businesses in Kibera and Pallet Café, Nairobi.

Figure 22: Pictures from other smaller sustainable businesses in Kibera and Pallet Café, Nairobi. Picture A shows pictures from Pallet Café, picture B shows picture from Greenthing, picture C shows picture from Victorious Craft Group, picture D shows pictures from Power Women Group, picture E shows pictures from jewellery maker, and picture F shows picture from Art 360.

8.6.1 Assessment of Sustainable Entrepreneurship in other smaller businesses

The small businesses are repurposing, reusing and reducing waste. This means the smaller businesses are increasing up the scale compared to the larger businesses in relation to the CBM parameter. Both Art 360 and Power Women Group are repurposing resources, and Art 360 is additionally reusing some of the materials directly. Victorious Craft Group uses horns and bones, meaning they fully utilise the resources that otherwise would have become waste. Greenthing that sells reusable products is reducing resource usage as their products can be reused multiple times, for example, metal straws. They are also reducing the amount of plastics in their products. However, they are still primarily producing "nice-to-have" products, which is not preferable.

The smaller businesses visited are established mainly by entrepreneurs growing up and living in BOP communities. They have all found an opportunity to do something for the environment while using cheap materials to create a better economy for themselves and others in the community. Some of the businesses are large enough to employ people from the local community. Still, others are not developing enough to have the finances to create employment opportunities for BOP communities. The products produced by the businesses are all products that aim to be sold to tourists. This is because of the marketing, as it is located near where tourists visit and because the products are "nice-to-have" products and have a price range too costly for BOP communities to become consumers (Appendix J & K).

Some of the small businesses also share similarities with elements of Africapitalism. As mentioned, Art 360, Power Women Group and Pallet Cafe all target employment of groups that face difficulties finding jobs, such as youth, HIV-positive women, and deaf people (Appendix J & K). This aligns with two of the principles of Africapitalism, which embrace *a sense of peace and harmony* as well as *a sense of progress and prosperity*. By employing marginalised individuals who experience challenges in the employment market, these businesses include human well-being and generate economic and social wealth. They provide conditions for a more meaningful life which contributes to a balance between economic growth and social impact.

The other smaller businesses include elements of Sustainable Entrepreneurship. Thereby these smaller businesses can inspire entrepreneurs to think about sustainability regardless of business size. The smaller businesses themselves also have possibilities for improving their sustainability.

8.7 Summary

In East Africa, multiple sustainable businesses exist. The investigated businesses in this project fit into some of the parameters of Sustainable Entrepreneurship. Their levels on the three parameters are found in Table 4.

Table 4: Summarizing table of the level of Sustainable Entrepreneurship of the mapped sustainable business in East Africa.

	CBM	BOP	Africapitalism
Takataka Plastics	Level 1	Level 4	Level 3
Ocean Sole	Level 2	Level 3	Level 1
Flexi Biogas	Level 1	Level 3	Level 1
Green Composting	Level 1	Level 3	Level 1
Recycle at OZTI	Level 1	Level 3	Level 3
Other businesses	Level 1-4	Level 3-4	Level 1-3

It is observed in Table 4, that all the businesses are located high at the BOP parameter as they, in general, are socio-economic businesses that create employment opportunities for BOP communities. At the Africapitalism parameter, the entrepreneurs lack sustainability because their entrepreneurship is not inclusive enough from the environmental perspective, and the social and economic practices are unstructured. Therefore most of the businesses are located at level 1 in Africapitalism. Yet there are some good examples, such as Takataka Plastics and Recycle at OZTI, which are assessed to be at level 3 at Africapitalism. At the CBM parameter, there are also possibilities for improvement, as the businesses mostly recycle materials instead of trying to refuse, rethink and reduce. Therefore, most businesses are assessed to be at level 1 at CBM.

The businesses thereby include some elements of Sustainable Entrepreneurship, but there are possibilities for improvements for most businesses. Businesses need contributions from other actors regarding Sustainable Entrepreneurship to enhance Sustainable Entrepreneurship in East Africa. Therefore, the following analysis explores other relevant actors regarding Sustainable Entrepreneurship and their role in transitioning to more Sustainable Entrepreneurship in East Africa.

9 Mapping of other relevant actors

The businesses assessed in the previous analysis all had elements of Sustainable Entrepreneurship but have the potential for improvement. Besides, sustainable businesses are not widespread in East Africa, hence there should be engendered more sustainable entrepreneurs. However, as entrepreneurs cannot be expected to stand for the progression themselves, this analysis aims to investigate other relevant actors and their role in the transition towards more widespread Sustainable Entrepreneurship.

This analysis addresses the second sub-question: *Which roles do different relevant actors play in enhancing Sustainable Entrepreneurship in East Africa?* The analysis is organised, such as the actor groups from the Quadro Helix perspective, see section 4.1, are represented. Hence, the analysis maps public institutions, knowledge institutions, and local communities. The data used for the analysis is provided through interviews with respondents from the actor groups and supplementary literature.

9.1 Public institutions

Public institutions are important to Sustainable Entrepreneurship as they frame restrictions and possibilities. When exploring public institutions as an actor group, the actors are at different levels of society. This project explores public institutions in three sections: East African Community, national regulations and policies, and corruption.

9.1.1 The East African Community

Intergovernmental organisations are a part of the frame conditions even though they do not provide legally binding agreements. For instance, the East African Community (EAC) is engaged in the global discourse on climate change policy by providing leadership on regional climate change policies and integrating climate change adaptation and mitigation measures into regional integration programs. Since 2009, the EAC has played a crucial role in facilitating a forum of National Climate Change for the partner states: Burundi, Kenya, Rwanda, South Sudan, Tanzania, and Uganda. These forums are considered instrumental in identifying climate change priorities at the national level and informing the development of national climate change positions (East African Community, n.d. b).

To address environmental challenges and promote sustainable development in the region, the EAC developed a range of initiatives and policies with environmental and natural resource management as key priorities. Additionally, the EAC has stated that they are taking steps to develop and harmonise

standards and regulations on pollution control and waste management across the regions. However, when, and how far they are in the process is unknown (East African Community, n.d. c).

In 2011, the EAC developed a climate change policy that collectively addresses the impacts and causes of climate change in the region through adaptation and mitigation actions to help and guide the partner states and other stakeholders. Furthermore, the policy aimed to ensure sustainable social and economic development. The policy anticipated establishing a regional framework for coordinating and implementing climate change initiatives by promoting public awareness of the socio-economic importance of climate change and by promoting capacity-building efforts through, e.g., education, training and research (East African Community, 2011a).

All the initiatives and policies the EAC developed in the Climate Change Master Plan in 2011 outlined a long-term strategy to address climate change challenges, opportunities, and priority actions. The master plan aimed to provide a clear picture and vision for the region's response to climate change, estimating the necessary resources needed for the EAC to build its climate resilience. The master plan is valid from 2011 to 2031 (East African Community, 2011b). In continuation of the policy and the master plan, a strategy was developed to guide the implementation of the EAC Climate Change Policy in the region. The strategy was valid from 2011-2016 and based upon six broad strategic objectives, including the enhancement of climate change adaptation and mitigation and the enhancement of climate change education through training and social empowerment (East African Community, 2011c).

The EAC's climate change policy, master plan, and corresponding strategies were developed to address the negative effects of climate change in the region and explore potential opportunities regarding climate change. The focus was on ensuring sustainable development in the region. However, neither the climate change policy nor the master plan has been revised since their development. This lack of revision and updates makes it challenging to determine the status quo of the plan, whether goals have been achieved, and whether new challenges have emerged. This indicates a lack of monitoring and evaluation of the climate change program by the EAC. Furthermore, the fact that no new climate change strategies have been developed since the previous one expired in 2016 indicates a lack of commitment by the EAC. This raises questions about the effectiveness of an intergovernmental organisation like the EAC in facilitating a forum of National Climate Change for the partner states. The lack of commitment and monitoring of the Climate Change Plan by the EAC risks undermining addressing the climate issues. Besides, it could have consequences for the region's commitment to the climate change policy and social, economic, and environmental sustainability.

9.1.2 National regulations and policies

Multiple governments have implemented waste management policies and regulations in East Africa to improve the national environment and poor waste practices. One of the most expanded regulations implemented across East African countries is the ban on single-use plastic carrier bags. However, implementing the plastic bag ban legislation across East African countries has been inconsistent. For example, Rwanda successfully banned plastic bag production, import, sale, and use in 2008. On the contrary, Kenya and Tanzania's implementation of the ban were repeatedly delayed until 2018 and 2019, respectively. Meanwhile, Uganda has announced bans on plastic bags on four occasions but has yet to implement them (Behuria, 2021).

There are various factors contributing to the diverse implementation of these bans. One explanation is the significant influence of domestic plastic industries, as their structural power in terms of job provision and contribution to the manufacturing economy has impacted the adoption of anti-plastic bag policies. Another explanation is that industry lobby groups and domestic plastics industries have hindered the approval of anti-plastic bag legislation (Behuria, 2021).

The Kenyan government has announced bans on plastic bags four times since 2005, but each time the bans were met with resistance from plastic manufacturers. The producers and traders argued that such bans would lead to job losses for factory workers, supply outlet workers, and street vendors who rely on plastic bags for distribution. As a result, plastic production continued to grow, reaching 400,000 tons annually by 2014 (Behuria, 2021). However, during this period, the government faced mounting pressure from local activist groups, foreign environmental agencies like United Nations Environment Programme (UNEP), and the media, including social media campaigns such as the popular hashtag *#banplasticsKE*. Finally, in 2017, the government yielded to the pressure and implemented a strict ban on plastic bags in August 2018. The ban carries harsh penalties of up to four years in prison or fines of $40,000 for anyone involved in producing, selling, or even carrying plastic bags (Behuria, 2021).

The failed implementation of plastic bag bans in Uganda can be attributed, in part, to the influence of domestic plastic industries. Despite the government announcing bans on four separate occasions since 2007, implementation has been consistently delayed. This delay can be explained by the limited motivation of the Ugandan government to seek external legitimacy through environmental policies. Uganda's development strategy has become increasingly centred on oil since major deposits were discovered in 2006, which has conflicted with conservation efforts and broader environmental and sustainable development goals. While Uganda announced a plastic bag ban in 2007, it was not until 2009 that the ban was mentioned again in relation to the national budget, but without any actual implementation. In April 2015, Uganda's National Environment Management Authority (NEMA) attempted to implement a ban

on manufacturing and using polythene bags less than 30 microns thick. However, it was quickly postponed as then Prime Minister Ruhakana Ruganda stated that the ban needed to be discussed with other ministries and stakeholders before implementation. The ban has, therefore, not yet been implemented (Behuria, 2021). President Museveni has consistently reversed his position on banning plastic bags, which shows that the government is split between catering to different interests. The uncertainty surrounding plastic bag policies has contributed to hesitation among businesses to invest further in alternatives for single-use plastic bags, as they remain unsure of the government's stance on the matter (Behuria, 2021).

Although implementing the plastic bag ban has varied across East African countries, it remains one of the most extended environmental regulations in the region. The enforcement of strict penalties, including jail time and fines, has effectively curbed the use of single-use plastic carrier bags. Nevertheless, the ban addresses only a fraction of the larger waste problem in the region, and waste management remains a significant challenge in East Africa (Behuria, 2021).

Besides the ban on single-use plastic carrier bags, East Africa has several but less expanded environmental regulations, see section 2.2. These regulations are designed to ensure that the waste management system operates effectively and efficiently. However, despite these efforts, the waste management systems in East Africa still face significant challenges, primarily due to the lack of monitoring and enforcement of policies and regulations.

9.1.3 Corruption

Institutional constraints such as corruption hinder public institutions in East Africa, which poses a major obstacle to sustainable development. Despite environmental regulations and initiatives, progress in this region is slow due to the lack of focus from authorities. Besides, formal institutions experience persistent challenges, such as the absence of a transparent legal system for defining property rights in productive assets and an effective court system for protecting those rights. According to the Corruption Perceptions Index[3], Tanzania, Kenya, and Uganda score respectively 39, 30, and 27, indicating a high level of corruption in these countries (Transparency International, 2021). For comparison, Denmark has a score of 88 (Transparency International, 2021). The combination of economic crises and these issues has created a fertile ground for corruption, which remains a significant barrier to economic and environmental development in the region (Tillmar, 2016a). This is seen in Uganda, where the government's

[3] Corruption Perception Index scores countries on how corrupt they are. It goes from 0 to 100, where 0 is highly corrupt and 100 is very clean (Transparency International, 2021).

close relationship with manufacturers and prioritisation of the oil industry has resulted in a 17-year delay in implementing a plastic bag ban.

The clash between public institutions and societal norms has led to challenges in collaboration between businesses and institutions, as well as formal and informal businesses. As a result, public institutions lack trust, and businesses may struggle to secure funds for projects that do not align with the government's agenda (Tillmar, 2016b). For example, Takataka Plastics faced difficulties securing funds as the available funding was given to businesses with closer relationships with the municipality. Therefore, they had to apply for international funds to develop their business (Appendix A).

9.2 Knowledge institutions

Another important group of actors regarding Sustainable Entrepreneurship is knowledge institutions. Different kinds of knowledge institutions exist, e.g. universities, schools, and organisations designing programs, training and clubs. Knowledge institutions are important actors when investigating Sustainable Entrepreneurship as they can progress the knowledge about establishing entrepreneurship and making social, economic and environmental improvements. In this project, three different knowledge institutions in East Africa are investigated, namely: Circular Innovation Hub, Kawa Training Center and Gulu University.

9.2.1 Circular Innovation Hub

Circular Innovation Hub is an organisation located in Nairobi, Kenya, working with circular economy and mostly doing programmes for circular start-up businesses. Circular Innovation Hub describes its mission as follows:

"*To be an active part of fast-tracking the development towards a more circular and sustainable society by creating a collaborative platform where stakeholders can grow, meet, influence and be seen.*" (Circular Innovation Hub, n.d.)

The organisation has existed for 1,5 years and has six employees. When visiting the Circular Innovation Hub, they hosted their fourth programme for circular start-up businesses in East Africa, teaching them how to scale their business.

The program spans over ten days and addresses various challenges experienced by circular start-up businesses covering various topics such as marketing, fundraising, scaling, relevant staff, and pitching.

Moreover, Circular Innovation Hub assigns mentors such as circular economy experts to guide the attendees throughout the program. Circular Innovation Hub also helps circular start-up businesses be linked up with relevant investors, well-fitted for their business model. The attendees get a new applicable network and are taught how to collaborate and share knowledge. Usually, the attendees are good at keeping the contacts and using them after the program has ended (Appendix F). Circular Innovation Hub's program focuses on circularity in business models and developing entrepreneurship in East Africa. Regarding circularity, Circular Innovation Hub invites businesses that recycle, reuse and repurpose, meaning that they do not focus on reducing, rethinking and refusing.

Circular Innovation Hub appeals to start-up businesses. Examples of businesses that have been a part of their program are Green Composting and Pine Kazi[4]. These businesses had already developed a circular business model and were established as a business before joining the program (Appendix F). The program attendees have found information about Circular Innovation Hub's program, as Circular Innovation Hub does not reach out to relevant attendees (Appendix F). Therefore, the limited target group for Circular Innovation Hub's program is circular start-up businesses that actively search for relevant programs to participate in.

Circular Innovation Hub contributes to increasing Sustainable Entrepreneurship in East Africa by helping circular start-up businesses develop and scale. Yet there are some elements of Sustainable Entrepreneurship, such as a focus on reducing, rethinking and refusing and engaging more locals to do entrepreneurship, that Circular Innovation Hub is not promoting.

9.2.2 Kawa Training Center

Kawa Training Center is a non-profit organisation that prepares the local youth in Zanzibar for future employment. They focus on training the youth in Zanzibar through different courses such as hospitality and tourism, computer use and entrepreneurship. Besides training the youth for employment, Kawa Training Center is also doing beach clean-ups with the pupils and having workshops where they turn waste into new products. Furthermore, they have a bicycle leasing shop and a café where the pupils can practise what they have learned and get a job for a period (Appendix M). The initiatives facilitated by Kawa Training Center are improving Sustainable Entrepreneurship, as the youth in Zanzibar are taught English, entrepreneurship, tourism etc. These courses help the youth understand how to create job opportunities and businesses, primarily targeting the tourism sector. But the pupils also learn how to

[4] Pine Kazi is a kenyan business, using pineapple waste to produce different products as shoes and bags (Pine Kazi, n.d.)

create products out of waste, and Kawa Training Center helps them go to markets to sell the products (Appendix M). They also learn how to recycle, reuse and repurpose different materials that are usually considered waste. Kawa Training Center is thus improving Sustainable Entrepreneurship as they prepare BOP communities to become producers in the global market and thereby increase the employment rates, economy and social wealth in BOP communities. Besides, it improves Sustainable Entrepreneurship as the young Zanzibarian learn how to use waste as a resource.

Kawa Training Center is recruiting young Zanzibarians in Stone Town, but they wish to expand to other areas of Zanzibar. They have a lot of pupils, but they try to give every applicant a chance to be in the program. Kawa Training Center only appeals to young Zanzibarian, as they believe it is the most important target group to improve the future economy, social well-being and environment. Thus, Kawa Training Center is increasing Sustainable Entrepreneurship as they appeal to people who are not yet in the Sustainable Entrepreneurship community.

Kawa Training Center thereby contributes to increasing Sustainable Entrepreneurship in East Africa by teaching young Zanzibarian how to create circular business models, as well as improving the economy, social well-being and generating employment for BOP communities.

9.2.3 Gulu University

The universities in East Africa are essential knowledge institutions regarding improving Sustainable Entrepreneurship. At Gulu University, more faculties relate to Sustainable Entrepreneurship, e.g. *Business and Development Studies* and *Agriculture and Environment*. The programs at Gulu University are trying to involve the students more and teach them practical work as they are a part of Building Stronger Universities. Here the university has learned about problem-based learning (PBL) and how this method can be rewarding for the students (Appendix D). On their website, the focus of PBL is stated: *"Our focus on practice-oriented training using transformative pedagogy which aims at producing critical thinkers who are problem solvers."* (Gulu University, n.d.) The Dean of the Faculty of Agriculture and Environment at Gulu University, Collins Okello, explains that they are trying to exchange lecturer-centred teaching with more practical education where the students are more involved. He says: "*The practical and cultural skills are integrated in the curriculum as it is seen as some of the most relevant competencies to come out with."* (Appendix B). Besides, they try to provide the students with real-life problems to solve and encourage them to interact with the local community. The students additionally do internships, and some of them went for internships at Takataka Plastics to see the possibility of improving Takataka Plastics' internal processes (Appendix B). The motto of Gulu University is "*We want to transform*

communities" (Appendix D). Therefore, they involve the community in the curriculum. So besides integrating PBL into the curriculum, they are also inviting people from the local community to give feedback on the curriculum and explain what could be improved if the community should gain from the university. There is still some one-way communication where the lecturer teaches students in theoretical matters, but they try to interact with the students and let them present their work from real-life projects. When doing a real-life project, the affected local community is invited to the presentation of the findings (Appendix D).
At Gulu University, they, in some ways, improve Sustainable Entrepreneurship as the students learn how to work practically instead of only being prepared for desk jobs. Thereby, they are being taught how to be producers in the global market, which can lead to more employment opportunities for BOP communities.

It is not free to study; therefore, the students from Gulu University all come from homes with enough resources to pay the tuition fee (Gulu University, 2022). Besides, the students are already interested in the subjects of development, business and environment as they have chosen education in those subjects. Furthermore, the students get a chance to engage with BOP communities in the projects they participate in. Therefore the programs at Gulu University are advantageous for BOP communities, even though the programs do not appeal to the participation of BOP communities. The programs can thus provide BOP communities with a desire to do Sustainable Entrepreneurship as they do engage in the students' projects, which Geoffrey Tabo Olok emphasises:

"In general, we try to make the students come out of the university as much as possible and engage with the society and build solutions for people." [...] "The university tries to find cultural solutions. In the beginning, we tried to build solutions for a given problem, but now we see a need for a broader perspective and involvement of the local communities that we are creating solutions for. Therefore, we involve the community through feedback on solutions, products and invite the local community for dialogue with the intention of creating more sustainable and successful solutions." (Appendix D)

Thus, Gulu University contributes to increasing Sustainable Entrepreneurship in East Africa, as the students are taught some background knowledge in business management and get a chance to engage with the local community and experience sustainable businesses. Yet the students are not taught in circular economy nor come from BOP communities. Therefore Gulu University can still be better at promoting Sustainable Entrepreneurship.

9.3 Local communities

It is necessary to examine how local norms and cultures impact Sustainable Entrepreneurship. This section will analyse local communities in regard to job opportunities and how circularity, as well as women and gender roles, are affected by norms and culture and affects the opportunities for improving Sustainable Entrepreneurship.

9.3.1 Job opportunities

The educational level in East Africa is generally low, thus in 2020 37% of the youth, people aged 15-29, have no education. Besides, 49% of the youth in East Africa have a primary or lower secondary degree, and only 14% of the youth have an upper secondary or tertiary degree (Kamer, 2022). Most youths in East Africa have no degree or only limited education, and therefore they do not have adequate knowledge, thus low possibility of finding well-paid jobs (Kamer, 2022). This is especially a problem in countries like Kenya, with a growing youth population. Here 80% of the population is under the age of 35, however, the Kenyan economy is not able to develop enough jobs for this growing youth population. Hence, the highest unemployment rate in East Africa is happening in Kenya, especially among the youth (Grzeslo, 2019). Under these circumstances, the youth can be considered both a challenge and an opportunity (Grzeslo, 2019). According to Grzeslo (2019), young people are more risk-seeking, which can enable entrepreneurship to happen. The youth is, therefore, essential for establishing Sustainable Entrepreneurship, which is a precondition for creating more accessible jobs in these economies. As there is currently a scarcity of jobs, local communities can participate in creating jobs themselves.

Job opportunities are likewise an issue in Uganda, hence only 100.000 out of 400.000 students, who graduate from university each year, will find a job, according to Collins Okello (Appendix B). Furthermore, finding a job with a degree is rather challenging (Appendix B). The preferred jobs are desk jobs, which are more certain to get than becoming an entrepreneur and developing a business (Appendix D). This is an issue as the desk job does not necessarily contribute to creating more jobs that the economy desperately needs.

The few who become entrepreneurs face obstacles to finding reliable business partners, suppliers, customers, and employees (Tillmar, 2016a). Tilmar (2016a) argues that this can be due to theft by employees, customers who fail to pay their debt or failure of suppliers based upon a case study made in Tanzania, Kenya and Uganda, making it difficult for both male and female entrepreneurs to establish a business and become entrepreneurs. Corruption is likewise an issue which is sometimes taken for granted

and even presupposed in the business community. Therefore, many locals have a lack of trust in the public institutions. (Tillmar, 2016a) Another obstacle many new entrepreneurs experience is the difficulty of finding finances and capital. Okwoko mentions this: *"A great challenge has been getting the financial aspect such as funds, taxa etc. There are limited resources locally, so it was necessary to seek funds internationally"* (Appendix A).

The difficulties associated with job opportunities in East African countries are necessary to overcome as many struggle with poverty, and it becomes almost impossible to limit BOP communities without the accessibility to education and jobs. Sustainable Entrepreneurship, however, provides the possibility for providing more jobs and improving livelihood in the communities.

9.3.2 Circularity

Africans, especially BOP communities, have historically lived rather circularly and are used to utilising their resources due to scarcity (Kalina et al., 2021). This is also seen as the African citizens are generating less waste than the rest of the world, see section 2.2. Muggenburg elaborates on the local communities' circularity:

"Our local community can not really reduce because they have so little, they already reuse what they can, and there is no recycling in Zanzibar. Therefore, we have made our own 3Rs - Responsibility, refuse plastics and respect." (Appendix I)

Also, Wekesa explains his own experiences with circularity in the local communities in East Africa: "[…] *circular economy has in a way always been a part of me as my culture had a great focus on getting as much out of the resource as possible and getting things to last as long as possible."* (Appendix G). Therefore the local communities in East Africa do not have much possibility to change their consumption patterns. But even though the local communities live circularly, it does not mean they have a circular mindset and understand the need for circularity, as they do it for survival (Appendix G). Therefore, the circular lifestyle but lack of awareness about circularity in the local community in East Africa need to be considered when developing a circular business model and seeing the locals as potential entrepreneurs.

Many Africans see these industrial products as better and more applicable than reused and recycled products, often associated with lower status (Appendix G). Besides, they do not trust the quality of recycled products compared to products made from virgin raw materials (Appendix A). Okwoko explains there is no trust in recycled or reused products, as they do not have knowledge about resources

(Appendix A). Okwoko exemplifies this: "*We have a hard time convincing the locals that a recycled based product also can be a good product as there is low trust in recycling and a common perspective of it as not sustainable.*" (Appendix A)

The locals must gain awareness to understand that recycled products are comparable with products of virgin raw materials. Fatma, who works at Recycle at OZTI in Zanzibar, further comments on awareness and explains that education is vital in creating better waste management systems and minimising the amount of waste, as the locals are unaware of the problems associated with waste. For example, the children in Zanzibar are cleaning up villages and beaches, and they know the term *takataka*[5]. Still, they do not understand the obstacles with waste and why it is important to minimise it (Appendix I). Therefore, it is fundamental that awareness is spread in local communities.

9.3.3 Women and gender roles

Other aspects that are impacted by norms and culture are gender roles and the view on women in particular. For example, it can be difficult for women to become entrepreneurs in the formal economy as it does not correspond well with the culture. Yet, globally, women represent a rapidly growing group of entrepreneurs and are essential development drivers in especially developing economies (Lindvert, 2017).

More than 89% of the women in sub-Saharan African countries work in the informal economy, and more than 50% of all women in East Africa work in agriculture (United Nations Women, 2022). One of the main reasons for women working informally is the family responsibilities the women have in East Africa. Women are responsible for childcare and household work (United Nations Women, 2022). Therefore many women choose flexible and temporary jobs to balance jobs and private life (Murumba & Mungai, 2018).

According to Tillmar (2016a), the obstacles entrepreneurs experience vary depending on gender. Many female entrepreneurs experience their husband's unappreciation of their wife's controlling income, which challenges the husbands' self-esteem (Tillmar, 2016a). This can result in the withdrawal of support from the husband or even domestic violence (Tillmar, 2016a). Another challenge for women is that men are often prioritised over women regarding legal conflicts. Tillmar (2016a), additionally states that marriage influences women's access to justice as married women are treated better in business corporations than unmarried, widowed or divorced women. It should be noted that if the husband is not

[5] Takataka means garbage, trash or waste in Swahili (Glosbe, n.d.)

supportive of the wife's business, he could exacerbate the problems as business partners, depending on his support (Tillmar 2016a).
According to Judith Awacorach, it can be difficult for especially young women to do entrepreneurship as they do not have the same possibilities to access finances as men. Likewise, not all women have an ID, which is more common for men, hence men have better opportunities to establish businesses (Appendix E).

9.4 Summary

Through this analysis, three actors: public institutions, knowledge institutions and local communities, are mapped with a focus on what obstacles they consider regarding Sustainable Entrepreneurship.
The ineffective regulation and policy implementation in promoting sustainable development is rather complex. While already existing regulations and policies are deemed "good," their effectiveness in promoting sustainability is still inadequate. Corruption and the absence of focus and concrete actions from authorities are some factors contributing to the slow progress. However, sustainability development and hereby entrepreneurship do not solely rely on regulations and policies. Other actors, such as businesses, knowledge institutions, and local communities, also play significant roles in promoting sustainability.
Different kinds of knowledge institutions can promote Sustainable Entrepreneurship in different ways. The visited knowledge institutions all promote elements of Sustainable Entrepreneurship, but they are likewise all missing some that could improve Sustainable Entrepreneurship in East Africa. This is, for example, to include refusing, rethinking, reducing and including BOP communities in their programs.

Regarding local communities, some obstacles concerning societal norms and culture are common. When promoting Sustainable Entrepreneurship, particular attention should be paid to the possibility of creating jobs, as many East Africans, especially the youth and women, struggle to find jobs. It is likewise necessary to create awareness about the high quality of recycled products, as there exists a culture of belief that recycled products are less attractive as well as of lower quality and, therefore, of lower status than products of virgin raw materials. Finally, it is necessary to empower women in promoting Sustainable Entrepreneurship as the cultural view on women does not encourage entrepreneurship, neglecting a huge potential for women to enter the labour market.
It is essential to investigate and identify different actors and the individual and corresponding obstacles and how they, in collaboration, can contribute to promoting Sustainable Entrepreneurship. The interdependency of these actors to successfully obtain Sustainable Entrepreneurship will be necessary to achieve progression and create sustainable development in East Africa.

10 Investigation of prospects of Sustainable Entrepreneurship

In the previous two analyses, the actors within Sustainable Entrepreneurship are mapped to investigate their role in the transition to improved possibilities of Sustainable Entrepreneurship. The analyses concluded that actions and initiatives are necessary for more Sustainable Entrepreneurship. Therefore, this analysis aims to investigate which initiatives can enhance the prospects of Sustainable Entrepreneurship.

This analysis addresses the third sub-question: *How can the conditions be improved for Sustainable Entrepreneurship in East Africa?* The analysis is structured by the three parameters of Sustainable Entrepreneurship: CBM, BOP and Africapitalism. For each section, it is investigated what initiatives the actors within Sustainable Entrepreneurship should consider. Finally, the analysis builds upon the last two analyses, literature, interviews, and observations with the actors within Sustainable Entrepreneurship.

10.1 Circular business models

The mapping of sustainable businesses revealed that the majority of the businesses encompass elements of Sustainable Entrepreneurship and are categorised as either level 1 or level 2 at CBM as they primarily recycle or repurpose waste, see section 8. While recycling and repurposing may be classified in the lower levels within the parameters of CBM, it is crucial to note that this categorisation does not imply a lack of sustainability. Recycling and repurposing waste is superior to using virgin materials and waste ending at landfills. Additionally, businesses operating with recycling and repurposing serve as a source of inspiration for emerging entrepreneurs. Moreover, businesses that have not yet integrated circularity into their business models can learn from recycling and repurposing businesses and adopt similar sustainable practices.

Several of the mapped businesses operating with recovering, recycling, and repurposing are acting as catalysts, inspiring both emerging entrepreneurs and established businesses to adopt circularity in a business. A notable example is Takataka Plastics, a business actively engaging with individuals and potential entrepreneurs by inviting them to its production site and offering informative tours. This initiative extends to various groups, including pupils, students, and Christian organisations, aiming to raise awareness about recycling and inspire Sustainable Entrepreneurship. Furthermore, Takataka Plastics wants to extend its support to entrepreneurs by sharing its expertise in PET recycling technology (Appendix A). These examples highlight the potential for businesses that have embraced circular economy

practices to enhance Sustainable Entrepreneurship. By offering guidance to potential and current entrepreneurs, these businesses emphasise the positive market prospects that emerge when waste is recognised as a valuable resource.

Recycling and repurposing are excellent alternatives to virgin materials, but their environmental sustainability varies. It is necessary to prioritise producing "need-to-have" products to ensure a more sustainable approach. Generating sustainable products that do not replace non-sustainable products can contribute to overconsumption and a likelihood of rapid waste generation. Green Composting and Takataka Plastics are businesses that recycle waste into "need-to-have" products. Green Composting focuses on recycling food and garden waste into compost, which is crucial due to the degraded soil in Tanzania (Appendix H). This compost can effectively replace conventionally produced fertilisers. Takataka Plastics recycles plastic bottles into tiles like the one shown in Figure 23, which is essential for bathrooms and kitchens, replacing clay tiles (Appendix A). However, it is worth noting that products like Takataka Plastics' tiles do not necessarily replace less environmentally friendly alternatives, as clay tiles possess eco-friendly characteristics such as a long lifespan (Tile Roofing Industry Alliance, n.d.) and higher thermal conductivity effect than plastic tiles (Hasan et al., 2023).

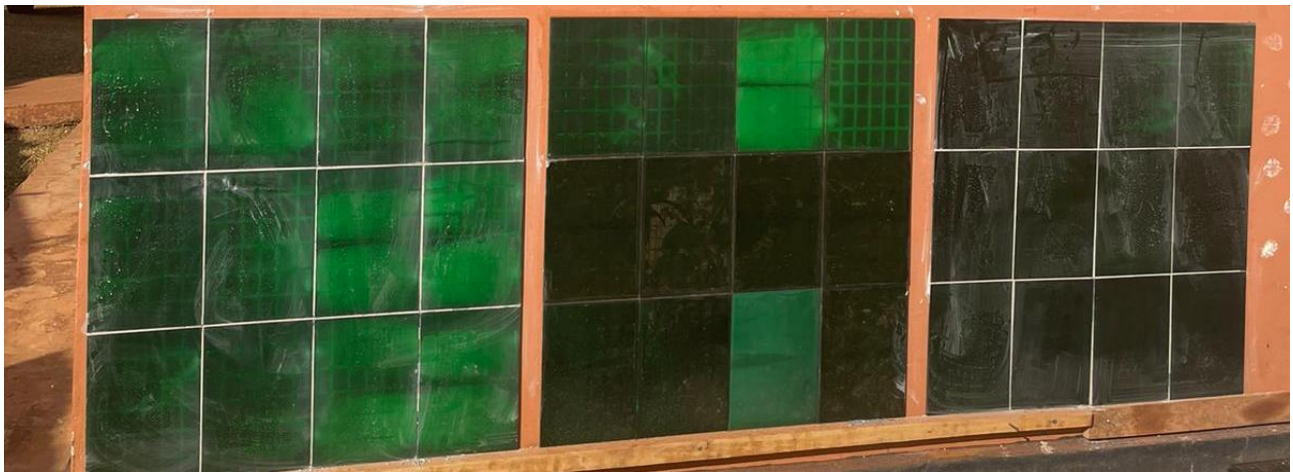

Figure 23: Picture of Takataka Plastics' recycled plastic tiles

As a new entrepreneur, it can be challenging to obtain knowledge about the demand for necessary products and existing markets (Appendix Q). It is important to add value to an existing working value chain, thus, entrepreneurs must consider which products they add to the market as by adding "nice-to-have" products to the market, environmental improvement can be comprised. However, it can be challenging for especially new entrepreneurs to understand the market.

Knowledge institutions can play a role in addressing this issue by providing education regarding products and markets that may be less commonly understood or accessible. Additionally, through workshops, students can contribute by sharing knowledge with businesses in their local communities. However, businesses are also responsible for actively seeking knowledge about their products, the value chain, environmental impacts, etc.

Even though recycling and repurposing are better than the complete absence of CBM, it is preferred that businesses progress towards reusing, reducing, and rethinking. However, it can be challenging to build a business model upon these levels, particularly during the start-up phase, when it may be difficult to envision a business model encompassing advanced circular practices. Zablon Wekesa comments on the equality between the absence of circularity in business models and the absence of awareness regarding circular economy and waste management: "*Clear lack of awareness and knowledge so the people do not know what is happening and are not aware of the present climate problems and the following impact.*" (Appendix G). Cecil Sagawala likewise states this problem: "*The local community needs knowledge about circular economy, how it can be beneficial and also how to create a business.*" (Appendix H). Hence, it is essential to create awareness about environmental issues, the circular economy, business opportunities, and the different levels of circularity. Knowledge institutions have a role in promoting awareness and highlighting the positive impacts of circular products. Thus, knowledge institutions can enhance opportunities for both new and existing entrepreneurs to adopt circular practices. However, knowledge institutions must tailor their teaching and knowledge sharing to suit the specific needs of different target groups. Additionally, knowledge institutions should strive to effectively incorporate hierarchies of circularity, circular strategies, and related concepts into their initiatives.

Kawa Training Center is a knowledge institution that can raise awareness about circular economy. Through their waste collection and recycling initiatives with pupils, Kawa Training Center is already teaching some circular economy principles. However, there is an opportunity for Kawa Training Center and similar knowledge institutions to expand their curriculum to include circular economy and the different levels within circularity. By offering knowledge of integrating circular economy principles into business models, knowledge institutions can contribute to developing more circular businesses. Moreover, by training the younger generation in circular economy, multiple knowledge institutions can collectively enhance the adoption of circularity in business models throughout the region.
Universities can also contribute to the needed awareness about circular economy, so more entrepreneurs include the elements of CBM. At Gulu University, they want to include circular economy in the lectures, but it has not yet been done (Appendix E). The universities have the knowledge and resources

to integrate circular economy in their courses, which would improve students' knowledge. Some of the students at Gulu University participate in internships at businesses and undertake collaborative projects with the local community. This presents an excellent opportunity to disseminate their knowledge of circular economy to fellow students, businesses, and the local community. To support this knowledge-sharing process, the university can organise and facilitate *Train the Trainers* sessions, enabling students to develop skills in effectively communicating knowledge about circular economy.
Thus, in particular, sustainable businesses and knowledge institutions must lead the transition in relation to the CBM parameter.

10.2 Base of the pyramid

All the mapped businesses were located at either BOP 3.0 or BOP 4.0, as they are generally socio-economic businesses that create employment opportunities for BOP communities. Thus, other businesses should be inspired by these sustainable businesses.

Besides inspiring sustainable businesses, Sustainable Entrepreneurship can likewise be enhanced by universities as they can provide knowledge and competencies to students who can elevate BOP communities. For instance, universities can offer impact through their learning methods, such as internships, where the students can experience different businesses and business models. As mentioned, Gulu University carries out alternative learning methods such as internships to interact with real-life problems and gain practical experience. This can inspire students to seek other ways than the usual desk job. In addition, Gulu University practises PBL to provide students with the opportunity to detect and solve problems (Appendix D). When practising PBL, the students interact with the local community, involving themselves with real-life problems and providing solutions that the community can use.

Kawa Training Center's learning methods also have elements of PBL as the pupils are taught how to solve problems they encounter in their daily lives, such as waste management and environmental conservation. For example, the pupils learn how to create products out of what is usually considered waste, and Kawa Training Center helps the pupils go to markets and sell their products, such as the ones shown in Figure 24.

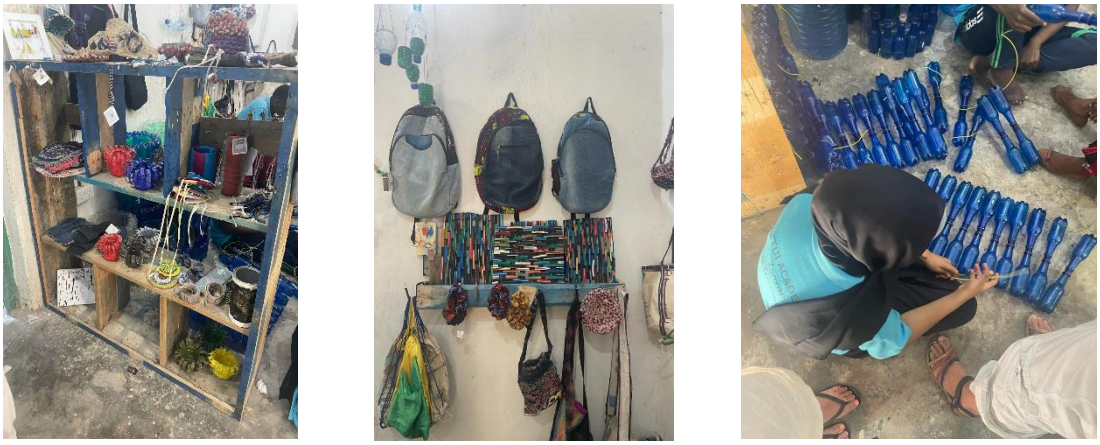

Figure 24: Pictures from Kawa Training Center's recycling workshop

Thus, the pupils learn how to create value from waste and understand how they can create their own job opportunities and businesses. Giving pupils the mindset of approaching problems as opportunities could encourage them to become entrepreneurs with the basis of solving problems within their community.

Besides knowledge institutions, sustainable businesses can likewise share knowledge and create awareness within local communities to enhance Sustainable Entrepreneurship in BOP communities. For instance, Takataka Plastics aims to create awareness among their local community by placing their recycling containers in visible locations throughout the city, as shown in Figure 25. By making their presence known, they are making people more conscious about their waste disposal habits. The implementation of Takataka Plastics' containers is contributing to a change in the disposal habits among many of the locals: "*We have noticed that locals' mindsets are starting to change – especially in the last two years when the locals have started to use the collective tanks more.*" (Appendix A).

Figure 25: Picture of Takataka Plastics' recycling containers for plastic bottles placed in the community.

Additionally, Takataka Plastics develop knowledge within their local community by employing individuals who may not have had prior work experience. At Takataka Plastics, they gain knowledge, skills, and a work mentality (Appendix A). Through employment, these individuals learn about the inner workings of a business, which can help to identify potential business opportunities in their community. Businesses can educate the local community by taking a community-based approach like Takataka Plastics, provide employment opportunities, and inspire individuals to establish their own businesses.

Sustainable businesses should seek to inspire other businesses through collaboration and knowledge sharing. By forming a network, businesses can cooperate, address common challenges and leverage each other's strengths to create new products or services, enter new markets or develop their social impact. This can be particularly beneficial for small businesses in BOP communities that may lack the resources or expertise to develop new products or expand into new markets. As mentioned, Takataka Plastics is the only company in East Africa that can recycle PET (Appendix A). By collaborating and sharing their expertise with other businesses in the region, Takataka Plastics could help these businesses develop new products incorporating recycled PET. Hence, not only create new opportunities for these businesses but also help to reduce plastic waste and promote environmental sustainability.

When entering the BOP market, businesses must consider the local context and the purchasing power of the people they are trying to reach. For example, Takataka Plastics has successfully targeted the BOP market by offering products that are affordable and accessible to the local community and likewise employing people from BOP communities (Appendix A). This illustrates an inclusive economic perspective that considers the local context. On the other hand, companies such as Recycle at OZTI and Ocean Sole have approached the elevation of BOP communities differently. For example, they have priced their products at a level, targeting tourists rather than the local community (Appendix I & L). However, Ocean Sole has successfully directly or indirectly employed around 1000 low-income Kenyans. Furthermore, Ocean Sole provides welfare for employees and their families, elevating the BOP community by considering them as producers (Appendix L). Likewise, Recycle at OZTI employs exclusively from BOP communities and additionally has created a women empowerment program where women learn how to become entrepreneurs themselves (Appendix I).

One of the major challenges for entrepreneurs from BOP communities is the financial aspects (Appendix A). In many cases, entrepreneurs from BOP communities lack the collateral or credit history that traditional banks require to obtain a loan. Moreover, the interest rates of loans available to them are often too high, making it difficult for them to repay (IDE-Jetro, n.d.). This makes it difficult for aspiring entrepreneurs from BOP communities to establish businesses and create employment opportunities for themselves and their communities. Therefore, sustainable businesses and knowledge institutions must actively contribute by sharing financial knowledge and facilitating connections with investors. Circular

Innovation Hub has succeeded in linking start-up businesses with investors, as demonstrated by their accomplishments with Pine Kazi. Numerous investors have expressed interest in Pine Kazi, and Circular Innovation Hub played a significant role in identifying the most suitable investor for the business. However, the current focus of Circular Innovation Hub is primarily on start-up businesses, overlooking potential future entrepreneurs. Consequently, knowledge institutions and sustainable businesses need to organise workshops, promote knowledge sharing, and establish collaborative networks to assist BOP communities in finance and investor engagement matters. Thus, sustainable businesses and knowledge institutions have, in particular, the potential for elevating BOP communities.

10.3 Africapitalism

Local communities do not trust circular products as much as industrial-made products. However, the circular alternatives might even, in some instances, be more beneficial from an economic and a health perspective. The lack of awareness regarding the quality and usability of circular products in local communities in East Africa derives partially from cultural norms and insufficient education, see section 9.3. For example, Takataka Plastics produces tiles for indoor use. Initially, they wanted to use plastic waste to produce roof tiles in collaboration with other businesses. However, this idea got discarded due to the status roofs have in Africa, as many do not want to be assumed only to be financially able to use recycled tiles for their roofs (Appendix A). As a result, Takataka Plastics discontinued the production of roof tiles. Despite the widespread use of tiles for roofing purposes, there is currently no existing market for recycled tiles, which would have a substantial environmental impact (Appendix A).

Green Charcoal also discovered a problem and made a product which minimises the issue. Green Charcoal is a project where they investigate how it is possible to produce green charcoal as briquettes based on agricultural residues that are not as unhealthy and harmful to the environment as black charcoal (Appendix E). Green Charcoal does not let the production and use of the product impact the environment or health negatively, thus including human well-being in their business model. The business demonstrates initiatives which can enhance Sustainable Entrepreneurship as they mobilise people in their community and improve their well-being and social wealth (Appendix B). Thus, Green Charcoal demonstrates how businesses can enhance in relation to Africapitalism.

Recycle at OZTI is another example of a sustainable business, as they figured that many women were unemployed and made a business model upon this realisation. Sjani Muggenburg initiated the women empowering program where women get tools and knowledge to collect plastic in nature and sell it to Recycle at OZTI, thus benefitting both the business and the women. For the best of the women, Muggenburg imagines they can apply for funding to get their own shredder, hence getting employees themselves. This ensures social wealth and improves the environment by removing plastic from nature. This

is done with the intention of creating a balance between the impacts of production and consumption on the environment, society, and economy while recognising the space in an inclusive manner. Economic growth must be inclusive and must therefore be conceived in business models. Thus, when businesses profit from their products, it must not be at the expense of the environment or social wealth, as these aspects, in fact, also must be improved.

As mentioned, many students think it is easier and more certain to get a desk job than establish a business by themselves, see section 9.3.1. Therefore, knowledge institutions like universities should participate in sustainable projects like Green Charcoal. The Green Charcoal project benefits both the students at Gulu University and the employees as they can attend the students' presentations of fieldwork and provide feedback, see section 9.2.3. Thus, locals and students can benefit from each other as the locals learn and potentially get inspired by the presentations. The feedback is likewise used to develop these types of projects. Regarding this, Collins Okello mentions:

"It can be a part of creating business opportunities for the locals because they want to link the project to entrepreneurship. They will install machines in different locations, present it for the youth and let them create their own businesses with the machine."(Appendix B).

It is distinct that locals and universities cooperate and that the universities teach and provide awareness for the employees at the projects such as Green Charcoal. If the knowledge about Green Charcoal can disseminate, the business can scale and consequently create more jobs. Green Charcoal's product is scalable as it is ordinary to use charcoal in Uganda (Khundi et al., 2010). The exemplary projects can lead to innovative and Sustainable Entrepreneurship and create awareness and experience of establishing a sustainable business for the students and locals.
Universities can additionally emphasise the acknowledgement and recognition of the significance entrepreneurs can provide for themselves and many others – both relating to the sustainable product and the impacts of production and consumption on the environment, society, and economy, but also on creating jobs. While universities may be expensive and not accessible to everyone, it does not imply that traditional education is the only path to knowledge. Universities can contribute by offering public lectures and expanding their range of exemplary projects, enabling the local community who cannot pursue higher education to gain access to valuable knowledge still. To demonstrate, Gulu University practises PBL, which could be presented as public workshops since it holds relevance for a broad audience. Such initiatives would promote progress and prosperity by creating opportunities for individuals to live more meaningful lives through increased access to education. Thus, sustainable businesses and knowledge institutions are the primary drivers regarding the widespread of Africapitalism.

10.4 Summary

This analysis investigates how the conditions for Sustainable Entrepreneurship in East Africa can be improved. The analysis is segmented into three parameters, CBM, BOP and Africapitalism, to provide recommendations for actors within Sustainable Entrepreneurship. Table 5 illustrates the identified recommendations for enhancing Sustainable Entrepreneurship in East Africa.

Table 5: Summarizing table of how knowledge institutions and sustainable businesses can enhance the prospects of Sustainable Entrepreneurship

	CBM	BOP	Africapitalism
Knowledge institutions	Train businesses in business models, market analysis and creation Teach businesses about different types of circularity Facilitate workshops about circular possibilities both for businesses and the local community Train the younger generation in circular economy - at a level well fitted for the target group Train university students to become trainers in circular economy Do exemplary projects in collaboration with the local community	Universities should provide internships at sustainable businesses Universities should practise PBL in their learning model Students should do real-life projects with the local community Knowledge institutions should train the youth in entrepreneurial skills Knowledge institutions should provide field trips Train businesses in pricing strategies Link investors to businesses	Knowledge institutions should engage in sustainable projects Knowledge institutions especially universities must emphasise the advantages of sustainable entrepreneurship Universities should facilitate public lectures relevant to the communities
Sustainable businesses	Inspire new entrepreneurs and existing entrepreneurs in including circularity: • Knowledge-sharing groups • internship possibilities • Inviting pupils, students, and locals to facilities Obtain knowledge about their product, value chain and environmental impacts	Make themselves visible in the local community Employ unskilled locals Networks and knowledge sharing with businesses Consider the pricing level of their products to fit the local markets	Develop their products to fit in the social norms of the community Create awareness about the advantages of their products Businesses should investigate how to stop inequality, by including the more vulnerable sections of society, such as women and youth Consider the jobs created in the business, to become inclusive and uplifting

Table 5 illustrates the division of Sustainable Entrepreneurship into three parameters alongside two key actor groups: knowledge institutions and sustainable businesses. The analysis identifies these actors as having significant potential to enhance Sustainable Entrepreneurship. Regarding CBM, knowledge institutions play a critical role in raising awareness about the circular economy across all societal levels. Furthermore, sustainable businesses have a vital role in promoting CBM by serving as sources of inspiration for others to incorporate circularity into their business models.

Regarding BOP, knowledge institutions must include outreach strategies, such as internships, PBL, community-based projects and youth training. Besides, knowledge institutions can help sustainable businesses with finances, such as pricing strategies and investor linkages. Sustainable businesses must make themselves visible in the local community and engage the locals in their work. Moreover, sustainable businesses should interact and collaborate, as it would be advantageous in developing Sustainable Entrepreneurship.

To enhance Africapitalism, knowledge institutions can teach about Sustainable Entrepreneurship, outreach the possibilities of Sustainable Entrepreneurship and facilitate open lectures and workshops. Sustainable businesses have a significant role in improving Africapitalism, as their products must be socially and economically advantageous for the local community. Therefore, sustainable businesses must develop their products to fit the norms of the community and create awareness about their products. Besides, sustainable businesses must include vulnerable groups of society and create socially responsible job opportunities. Thus, these findings show how knowledge institutions and sustainable businesses can create better conditions for improving Sustainable Entrepreneurship in East Africa.

11 Recommendations

The three analyses found that there are opportunities for enhancing Sustainable Entrepreneurship. Furthermore, it was found that knowledge institutions and businesses can enhance Sustainable Entrepreneurship. Thus, this section clarifies the recommendations through two posters to engage knowledge institutions and businesses, respectively. The purpose of the posters is to work as guidelines on how to enhance Sustainable Entrepreneurship. The recommendations aim to improve the prospects to do Sustainable Entrepreneurship for potential and existing entrepreneurs. Knowledge institutions and businesses can interpret the recommendations, but the aim of the recommendations should be preserved.

KNOWLEGDE INSTITUTIONS' ROLE IN ENHANCING:

SUSTAINABLE ENTREPRENEURSHIP

Sustainable entrepreneurship can improve environmental, social and economic issues occurring in East Africa, thus the prospects of doing sustainable entrepreneurship should be enhanced. Knowledge institutions play a significant role as they can provide competencies and knowledge to existing and potential entrepreneurs through education. Therefore, knowledge institutions should pursue the following recommendations to distribute sustainable entrepreneurship.

ENGAGE EXISTING ENTREPRENEURS

- Facilitate **lectures** for businesses on how to include **circular economy** in their **business models**
- Educate businesses on how **societal norms** and **pricing strategies** affect **market positions**
- Create **economically beneficial partnerships** through linking investors to businesses

ENGAGE POTENTIAL ENTREPRENEURS

- Include **problem-based learning, entrepreneurship**, and **circular economy** in your **curriculum**
- Emphasise the **advantages** of **sustainable entrepreneurship** in your learning model
- Provide attendees with the **experience of real-life problems** through **collaboration with local communities**
- Facilitate **public lectures** and **workshops** in how to engage with **sustainable entrepreneurship**
- Include **practical learning** through **internships** and **field trips** to sustainable businesses relevant to the communities
- Engage in **exemplary sustainable projects** to support the development of potential entrepreneurs

*All recommendations should be pursued on par with the target group. Additionally, the vulnerable groups of society must be included to counter balance inequality

SUSTAINABLE BUSINESSES' ROLE IN ENHANCING:

SUSTAINABLE ENTREPRENEURSHIP

Sustainable entrepreneurship can improve environmental, social and economic issues occurring in East Africa, thus the prospects of doing sustainable entrepreneurship should be enhanced. Sustainable businesses play a significant role as they can provide competencies and knowledge to existing and potential entrepreneurs through disseminating insight-knowledge. Therefore, sustainable businesses should pursue the following recommendations to distribute sustainable entrepreneurship.

ENGAGE EXISTING ENTREPRENEURS

- Participate in and facilitate **knowledge-sharing groups** with other businesses
- Create **awareness** about the sustainable **advantages of your products** in the community
- Obtain knowledge about your **products' environmental impacts**
- Consider how **societal norms** and your **pricing strategies** affect your **market positions**
- Offer **employment** opportunities to **vulnerable groups** of your community

ENGAGE POTENTIAL ENTREPRENEURS

- Provide **practical learning** by facilitating **internships** and **workshops**
- Arrange **guided tours** at your facility to **create awareness** about sustainable business opportunities
- Ensure **awareness** about sustainable business opportunities by making your business **visible** in the **streetscape**
- Offer employment opportunities for **unskilled** locals

*All recommendations should be pursued on par with the target group. Additionally, the vulnerable groups of society must be included to counterbalance inequality.

12 Discussion

The project's main objective is to investigate how Sustainable Entrepreneurship can be improved in East Africa by exploring the connection between sustainability and entrepreneurship. Through analyses and recommendations, the project aimed to answer the research question: *How can the prospects of Sustainable Entrepreneurship for communities in East Africa be enhanced?* Though, the results from the analyses and recommendations must be discussed in conjunction with the applicability in different contexts.

After thorough analyses of Sustainable Entrepreneurship in East Africa, it was found that sustainable businesses and knowledge institutions should lead the transition. Therefore, several recommendations are described for how knowledge institutions and sustainable businesses can encourage potential and existing entrepreneurs. However, it can be discussed whether the recommendations are the right solutions to enhance the prospects of Sustainable Entrepreneurship.

12.1 What is the potential for participation by the actors?

Knowledge institutions have the resources, knowledge, and power to engage existing and potential entrepreneurs in practising Sustainable Entrepreneurship. Through education, universities can affect and create awareness among students about Sustainable Entrepreneurship, which they can likewise introduce to their local community. The same applies to other knowledge institutions, such as Circular Innovation Hub and Kawa Training Center. However, the recommendations may be too extensive to assign to knowledge institutions as the recommendations do not allow for diversity among knowledge institutions and are fairly generalised. Thus, the recommendations do not take precautions to knowledge institutions choosing one area of Sustainable Entrepreneurship to work with. To demonstrate, Circular Innovation Hub is helping circular businesses with subjects such as finance, investments, and pitching. These subjects relate to scaling the business and primarily economic issues but do not include how the business can become more circular and improve social problems. Through the analyses, it has been suggested that Circular Innovation Hub should include more elements of Sustainable Entrepreneurship. Yet it can be questioned whether they should keep focusing on their field instead of trying to implement as many recommendations as possible.

Sustainable businesses are, likewise, given the responsibility of enhancing Sustainable Entrepreneurship. Most of the mapped businesses already profoundly include BOP and Africapitalism, thereby improving social and economic factors, such as creating employment for BOP communities, including the vulnerable groups of society, and minimising health risks. At the CBM parameter, the mapped

businesses are mainly recycling or repurposing. However, the question arises as to whether it is excessive to expect businesses to incorporate refusing, rethinking, or reducing.

Identifying a successful business model regarding reducing, rethinking and refusing can be challenging. However, identifying a business model regarding recycling or repurposing can be advantageous as creating new products from materials usually considered waste can be profitable. In addition, businesses that recycle or repurpose are already making environmental improvements compared to waste being burned or dumped in nature. Using the 9Rs to assess the CBM parameter might not fit with businesses as the top of the 9Rs more likely addresses public institutions. Yet, public institutions are not included in the recommendations due to their absence of commitment to Sustainable Entrepreneurship. However, the effects of implementing regulations and policies involving reducing, rethinking and refusing must be considered. The East African countries' ban on single-use plastic carrier bags is an example of a regulation not improving environmental impacts, as first anticipated. The banning has not led to reducing and reusing, as another type of plastic bags are now being used. In comparison, regulations like this could lead to environmental improvements. A government can, for example, create a breeding ground for Sustainable Entrepreneurship with regulations like banning plastic carrier bags if they prepare the locals and businesses. In addition, governments could collaborate with knowledge institutions and businesses so the businesses could be taught how to create bags out of materials other than plastic. To exemplify, jute is a material that grows easily in East Africa (ECHOcommunity, n.d.), and if the locals and businesses were taught to produce jute bags, the parameter of CBM would increase, as it would refuse plastic bags.

In East Africa, public institutions are not acting on their implementations, see section 9.1. Therefore, a bottom-up approach where local communities themselves are enhancing Sustainable Entrepreneurship could be advantageous. Local communities must interact with businesses, knowledge institutions and public institutions to enhance Sustainable Entrepreneurship. Local communities can make a difference by making conscious decisions in their daily lives, such as reducing their carbon footprint, supporting sustainable businesses, and advocating for sustainable policies as they fit in the category of potential entrepreneurs. However, given that local communities in East Africa may have other pressing priorities, it can be argued that it is unrealistic to expect them to prioritise this. To survive, local communities might have other priorities, such as money and food. Therefore, local communities are not the primary driver of the transition to Sustainable Entrepreneurship. Nonetheless, their endorsement and support are essential for progress.

12.2 Is a holistic perspective essential for Sustainable Entrepreneurship?

While sustainability is essential, the focus may have caused the neglect of other elements necessary to establish entrepreneurship. For example, the analyses and recommendations do not sufficiently address how potential entrepreneurs can obtain more general knowledge and competencies to develop a business. Judith Awacorach has dedicated her research to identifying the critical components required to create successful entrepreneurs, even with limited resources. According to Awacorach, several crucial aspects are necessary to support the development of Sustainable Entrepreneurship in East Africa and mention a need for guidance to link businesses and products to the market and partners as well as guidance to develop skills and knowledge (Appendix E).

Awacorach's emphasis on developing skills and knowledge highlights the need for a more comprehensive strategy to enhance fundamental entrepreneurship. Therefore, there is a need to provide entrepreneurs with the essential knowledge and competencies which can be achieved through targeted programs. Knowledge institutions could facilitate these programs and focus on market research, financial management, marketing, and legal compliance (Appendix E). By equipping entrepreneurs with these skills and knowledge, they can navigate the challenges of developing and running a business. This includes accessing funding and complying with tax regulations. Knowledge institutions such as Kawa Training Center and Circular Innovation Hub already facilitate such programs, but the programs should preferably be more widespread.

In terms of enhancing entrepreneurship, the entire value chain must be considered (Appendix Q). However, the study is mainly centred on the production chain. Thus, it can be argued that it has created a gap in the analyses and, therefore, the recommendations for entrepreneurship opportunities as these do not involve other areas within the value chain. While the production chain certainly is an essential aspect of the value chain, there are other areas where Sustainable Entrepreneurship can occur. Therefore, potential entrepreneurship opportunities may be missed by neglecting other value chain areas. Furthermore, a thorough understanding of a value chain from an entrepreneurship perspective could help identify where it can add value and differentiate from others. However, entering a market is challenging. Therefore, a holistic point of view on the value chain could be used to see where it is possible to add value to an existing value chain to increase the success rate of the business (Appendix Q). This could be adopted by entrepreneurs and knowledge institutions when working with the recommendations.

A holistic point of view on the value chain also opens the possibility of exploring entrepreneurship opportunities in different areas. Entrepreneurs may be able to reach out to rural areas and engage with local communities to incorporate their skills and resources into the value chain. For example, the Danish

firm Aller Aqua develops and produces fish feed with several production sites in Africa. Aller Aqua practices *Train the Trainer* with a focus on educating and training so locals in the areas develop working skills and get opportunities to elevate the community. In addition, having a holistic point of view on the value chain makes it possible to consider what individuals from different areas can contribute to the value chain instead of solely relying on supply from larger suppliers. This could enable entrepreneurship in other places of the value chain leading to more jobs. Thus, entrepreneurs may create more sustainable and inclusive business models that benefit local communities in urban and rural areas.

12.3 Is Sustainable Entrepreneurship a utopia?

The conducted analyses exclusively consider actors from urban areas in East Africa, meaning the research and recommendations are primarily addressed to this part of the communities. Furthermore, the empirical collection was performed in Gulu, Nairobi, and Zanzibar, hence the data similarly addresses issues related to Sustainable Entrepreneurship in urban areas. However, most of the population lives in rural areas, thus, the results cannot be generalised across East Africa. Therefore, additional research should be done to establish recommendations for the Quadro Helix actors in rural areas.

As mentioned, 80% of the working force is working in the informal sector, meaning that these are not included in the recommendations as these are solely aimed at existing and potential businesses in the formal sector. However, it is desired that the businesses in the informal sector transform into businesses in the formal sector, thus getting legally registered and paying taxes, to be considered sustainable, see section 7.1. On the other hand, informal businesses may not be interested or have the ability to become formal businesses, leaving a huge part of businesses outside of the recommendations. Thus, further research on engaging the informal sector in sustainability and Sustainable Entrepreneurship is suggested. This has affected the recommendations, as these are not the only solutions to encounter Sustainable Entrepreneurship since the recommendations for rural areas and the informal sector would vary as they experience other obstacles.

The definition of Sustainable Entrepreneurship is a combination of CBM, BOP and Africapitalism, meaning that for businesses to become sustainable, they must recognise and encompass all the parameters. The parameters are divided into four levels each, and for a business to be assessed as completely sustainable, it must include the highest level of each parameter. Yet this is a theoretical point of departure, as businesses in practice can be very sustainable even with lower levels obtained. Occasionally, recycling or repurposing can be the best opportunities as, alternatively, nothing would be done, thus, the waste

would not become a resource. The potential of such business models also depends on the surroundings and what is accessible for the individual entrepreneur.

Regarding the BOP parameter, a business can similarly be sustainable even if it is not established by a local, which is one of the conditions for entering BOP 4.0. Other factors, such as scalability and partnerships, also play significant roles in BOP 4.0 and are essential for Sustainable Entrepreneurship. In comparison, BOP 2.0 *Creating Fortune* and BOP 3.0 *Sharing Fortune* can likewise be the best solutions, as some entrepreneurs cannot enable fortune. By creating and sharing fortune, BOP communities are still elevated. The primary purpose is for the entrepreneur to have a mindset of sharing wealth with BOP communities, empowering and motivating their surroundings.

Regarding Africapitalism, the level of sustainability depends on how many of the principles are present in the business model. Yet, the principles are relatively challenging to concretise, as they overlap and are not specified to the individual principles. Therefore, Africapitalism is an economic philosophy appropriate for establishing a sustainable business, and the entrepreneur should pay attention to the principles. However, as the philosophy is relatively sustainable, the business would, in practice, still be considered sustainable even with few of the principles directly expressed.

Thus, it can be discussed if this project's definition of Sustainable Entrepreneurship becomes a utopia. Likewise, it can be discussed if the assessment tool for Sustainable Entrepreneurship instead should be used as a motivator for businesses to become more sustainable. All the elements might not be possible to consider in a business model, yet the entrepreneur can consider them when the business is well-established. It should be noted that young businesses, such as most of the mapped businesses, should establish themselves and create a foundation before they can elevate on the parameters. Businesses must balance the levels of each parameter and consider which core values they have.

A parameter which is not pronounced in the assessment tool is the interdependence of the actors to accommodate Sustainable Entrepreneurship. It is likewise significant to consider that actors are bound to their context, meaning that the reliability of the assessment tool depends on how well the specific context in which the businesses are bound is interpreted and reflected upon. Thus, it is impossible to rely solely on the assessment tool without acknowledging the context.

Only knowledge institutions and businesses are held accountable for the transition, thus it can be discussed whether the recommendations should include all the actor groups and the importance of collaborations and interactions between them. Interdependence between the actor groups must exist before Sustainable Entrepreneurship can be enhanced. The actor groups have different assets to exploit. The knowledge institutions have knowledge and voice, and the businesses have experiences in what has worked well and what obstacles they have experienced. Local communities have knowledge about real life and their needs, and public institutions have the power. Thus, enhancing Sustainable Entrepreneurship would become more effective if the actor groups interacted.

13 Conclusion

Environmental, social and economic issues are consequences of human actions and inactions. Especially in East Africa, the issues have significant effects. Waste is being dumped and burned, which exacerbates climate changes, which are already profound in East Africa. Furthermore, 44.2% of the East African population lives on less than $1.90 per day, and inequality and low education are additionally prevalent challenges. These issues can, however, be improved by sustainable entrepreneurship. Yet, the prospects of sustainable entrepreneurship must be enhanced to widespread sustainable entrepreneurship across East Africa. Based on this, the following research question was developed:

How can the prospects of sustainable entrepreneurship for communities in East Africa be enhanced?

As part of answering the research question, a mapping of several sustainable businesses in East Africa was initiated. These businesses have been mapped and assessed according to their level of sustainable entrepreneurship. The analysis aimed to investigate how well businesses practised sustainable entrepreneurship to understand which parameters were absent and which obstacles the businesses experienced. This would provide knowledge regarding how businesses can become more sustainable. The level of sustainable entrepreneurship of each mapped business can be found in Table 4.

Table 6: Summarizing table of the level of Sustainable Entrepreneurship of the mapped sustainable business in East Africa.

	CBM	BOP	Africapitalism
Takataka Plastics	Level 1	Level 4	Level 3
Ocean Sole	Level 2	Level 3	Level 1
Flexi Biogas	Level 1	Level 3	Level 1
Green Composting	Level 1	Level 3	Level 1
Recycle at OZTI	Level 1	Level 3	Level 3
Other businesses	Level 1-4	Level 3-4	Level 1-3

Thus, it can be concluded that the businesses, in general, have elements of sustainable entrepreneurship. Yet most of the parameters of sustainable entrepreneurship have opportunities for enhancement. In particular, in the areas of CBM and africapitalism, businesses can present opportunities to enhance sustainable entrepreneurship.

To supplement the first analysis, a second analysis regarding the role of different actors within sustainable entrepreneurship was conducted. The second analysis investigated how these actor groups can enhance sustainable entrepreneurship in East Africa.
The three actor groups investigated were public institutions, knowledge institutions and local communities. From the analysis, it was concluded that public institutions have the role of implementing regulations and policies regarding sustainable entrepreneurship. Yet it was concluded that even though public institutions implement regulations and policies, no action and monitoring is happening. On the other hand, knowledge institutions are an actor group that enhances the prospects of sustainable entrepreneurship by, e.g., facilitating lectures about entrepreneurship, doing projects in local communities and teaching attendees to recycle and reuse materials into new products. Yet, knowledge institutions can enhance sustainable entrepreneurship by paying more attention to the inclusion of circular economy and BOP in their curriculum and education. Local communities must likewise be included in the improvement of sustainable entrepreneurship as they must react to the other actors' actions and inactions. Yet, there are some complications regarding local communities, as societal norms, culture, employment opportunities and inequality decrease the prospects of sustainable entrepreneurship.

Based on the first two analyses, the third analysis aimed to investigate what initiatives are needed to enhance the prospects of sustainable entrepreneurship. Through the third analysis, several recommendations of how to improve the three parameters of sustainable entrepreneurship: CBM, BOP and Africapitalism, within the two actor groups: knowledge institutions and businesses, were presented. The outcome can be found in Table 5.

Table 7: Summarizing table of how knowledge institutions and sustainable businesses can enhance the prospects of Sustainable Entrepreneurship

	CBM	BOP	Africapitalism
Knowledge institutions	Train businesses in business models, market analysis and creation Teach businesses about different types of circularity Facilitate workshops about circular possibilities both for businesses and the local community Train the younger generation in circular economy - at a level well fitted for the target group Train university students to become trainers in circular economy Do exemplary projects in collaboration with the local community	Universities should provide internships at sustainable businesses Universities should practise PBL in their learning model Students should do real-life projects with the local community Knowledge institutions should train the youth in entrepreneurial skills Knowledge institutions should provide field trips Train businesses in pricing strategies Link investors to businesses	Knowledge institutions should engage in sustainable projects Knowledge institutions especially universities must emphasise the advantages of sustainable entrepreneurship Universities should facilitate public lectures relevant to the communities
Sustainable businesses	Inspire new entrepreneurs and existing entrepreneurs in including circularity: • Knowledge-sharing groups • internship possibilities • Inviting pupils, students, and locals to facilities Obtain knowledge about their product, value chain and environmental impacts	Make themselves visible in the local community Employ unskilled locals Networks and knowledge sharing with businesses Consider the pricing level of their products to fit the local markets	Develop their products to fit in the social norms of the community Create awareness about the advantages of their products Businesses should investigate how to stop inequality, by including the more vulnerable sections of society, such as women and youth Consider the jobs created in the business, to become inclusive and uplifting

Thus, it can be concluded that the above-presented recommendations are context-specific examples of how to enhance the prospects of sustainable entrepreneurship in East Africa.

To answer the research question, two posters were conducted to clarify and communicate the recommendations to knowledge institutions and businesses. From the posters, it can be concluded that knowledge institutions and businesses can perform different actions to enhance the prospects of

sustainable entrepreneurship for existing and potential entrepreneurs. Thus, it is concluded that the following recommendations can enhance the prospects of sustainable entrepreneurship in East Africa:

Knowledge institutions

Engage existing entrepreneurs:

- Facilitate lectures for businesses on how to include circular economy in their business models
- Educate businesses on how societal norms and pricing strategies affect market positions
- Create economically beneficial partnerships through linking investors to businesses

Engage potential entrepreneurs:

- Include problem-based learning, entrepreneurship, and circular economy in your curriculum
- Emphasise the advantages of sustainable entrepreneurship in your learning model
- Provide attendees with the experience of real-life problems through collaboration with local communities
- Facilitate public lectures and workshops on how to engage with sustainable entrepreneurship
- Include practical learning through internships and field trips to sustainable businesses relevant to the communities
- Engage in exemplary sustainable projects to support the development of potential entrepreneurs

Sustainable businesses

Engage existing entrepreneurs:

- Participate in and facilitate knowledge-sharing groups with other businesses
- Create awareness about the sustainable advantages of your products in the community
- Obtain knowledge about your products' environmental impacts
- Consider how societal norms and your pricing strategies affect your market positions
- Offer employment opportunities to vulnerable groups of your community

Engage potential entrepreneurs:

- Provide practical learning by facilitating internships and workshops
- Arrange guided tours at your facility to create awareness about sustainable business opportunities
- Ensure awareness about sustainable business opportunities by making your business visible in the streetscape
- Offer employment opportunities for unskilled locals

Hence, it can be concluded that the recommendations can enhance the prospects of sustainable entrepreneurship in East Africa. Yet other factors also play roles in enhancing sustainable entrepreneurship. It is moreover recommended that further research is made for the actions and roles of both public institutions and how local communities can act upon the implementations from other actors. Likewise, as entrepreneurship in itself is challenging in East Africa, further research must be done regarding how entrepreneurship can be enhanced, as sustainable entrepreneurship depends on the business's survival. Further research must be done for sustainable entrepreneurship in other regions as the recommendations are very context-specific and must coincide with the surroundings and circumstances.

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