



MINISTRY OF ENVIRONMENT AND FORESTRY

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Green Growth and Circular Economy Toolkit for Policy-Makers in Kenya**

Business Framework for Green Growth and Circular Economy Prepared

By

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Disclaimer

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List of Abbreviations/Acronyms

MSMEs	Micro, Small and Medium Enterprises
PETCO	Kenya PET Recycling Company
WEEEC	Waste Electrical and Electronic Equipment Centre
MTP	Medium Term Plan
GGEP	Green Growth and Employment Programme
KEPSA	Kenya Private Sector Alliance
KAM	Kenya Association of Manufacturers
SDG	Sustainable Development Goals
GG&CE	Green Growth and Circular Economy
NEMA	National Environment Management Authority
SCP	Sustainable Consumption and Production
KERA	Kenya Residents Association
EPR	Extended Producer Responsibility
WEF	Women Enterprise Fund
YEF	Youth Enterprise Fund
KIRDI	Kenya Industrial Research and Development Institute
KEBs	Kenya Bureau of standards

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Executive Summary

During county consultations, stakeholders were of the view that waste was mostly generated by hawkers, other small scale traders and micro enterprises. It was also noted that these entrepreneurs are mostly young and inexperienced. If they could organize themselves as individual entrepreneurs, youth and women groups or even business entities they could be trained on environmental conservation and good business practices. After training these eco-entrepreneurs could then be directed to channels of affordable credit to expand their businesses. In this way, they would generate more employment and promote better waste management, thus contributing to green growth and circular economy.

Some of these MSMEs could learn from established firms already running waste management production systems. A few of these firms include, Kenya PET Recycling Company (PETCO), Safi Organics, EcoPost Ltd, Sanergy Kenya, Taka Taka Solutions, Gijenge Masters Ltd, Brightgreen Company, Waste Electrical and Electronic Equipment Centre (WEEE Centre), and Weeco Recycling Company. These companies collect and recycle wet solid waste (including human waste), plastics, metals, glass, paper and cardboards, e-waste (computers, printers, mobile phones, fridges, batteries and other devices) and postharvest waste (sugarcane bagasse, rice husks, and macadamia husks). Some of the by-products of recycling processes are organic fertilizer; animal feed; durable outdoor furniture, and fencing and building materials; methane gas; and pavers.

Kenya has many policy and legal instruments governing environmental conservation and protection, however some are outdated or do not sufficiently address the problem of waste management, while others are yet to be fully enacted for implementation. However, if all the policies and legislation were effective there would be no mountains of waste, as is evident in most urban areas today. What is required is for County Governments to develop market responsive legislation, which ensure all relevant stakeholders are involved along the waste value chain. The legal framework should provide for zero to minimum use of landfills. Under the framework the role of county governments should largely be to oversee implementation of regulations and handle waste that cannot be recycled.

This study therefore recommends a business framework anchored on market responsive policies and legislation which promote zero landfills waste disposal system. The framework would entrench green growth and circular economy in consumption and production. Among the key recommendations are:

- I. Participants in the waste management value chain should undergo training on best practices in waste management- covering sorting, segregation and disposal of waste; and best practices in green labelling, standards, accreditation and certification.
- II. Legal frameworks should provide for classification, handling, processing and disposal of waste, including clear roles and responsibilities of all the stakeholders in the chain.
- III. Eco-entrepreneurs should get training on financial and business management.
- IV. National and County Governments should enact legislation to provide for zero landfills, with regulations providing timelines for achieving the goal.
- V. An Eco-Fund should be established with contributions from both levels of governments and development partners to provide affordable, accessible and predictable source of finance to deserving eco-entrepreneurs.
- VI. Alongside the Fund, a capacity building facility will be established to provide technical support to MSMEs. The support could cover business and product development; innovation and skills development; technology transfer, industrial design; and technical training on green certification, standards, and eco-labelling.

Business and industrial organizations will be encouraged to provide practical work experience to young entrepreneurs in key areas, including human and financial resource planning and management, project development, client relations and environmental conservation

Introduction

Among the issues raised during stakeholder consultations in the counties is that hawkers and other small scale traders and micro enterprises are the major generators of waste. Moreover, these entrepreneurs are mostly young and inexperienced; but if they could organize themselves into viable groups could be trained on environmental conservation and business management as well as GG&CE as an emerging new business frontier. They could then be directed to channels of affordable credit to expand their businesses. In this way, they could not only generate more employment, but could also contribute to better waste management in their counties.

This process would require collaboration between the national and county governments; and would benefit through engagement with the private sector. In the first place both levels of governments would need to see these small scale traders/eco-entrepreneurs as real agents of economic growth and stop harassing them. After all the sector, MSMEs constitute the largest share of the economy and if properly harnessed could drive social and economic development in the counties.

How could this happen? In other words, how can MSMEs be motivated to drive GG/CE? What kind of framework could motivate the development of this sector to grow without negative environmental impacts? As a start, the Third Kenya Vision 2030 Medium Term Plan (MTP III) aims to improve waste management through collaboration between National Government and County Governments in establishing waste management systems and providing incentives to investors to convert waste to energy. This in line with the Plan's goal of contributing to increased employment through the Green Growth and Employment Programme (GGEP) and transitioning the green economy to the local levels.

To achieve this would require a business framework within which different actors in the economy are self-motivated to ensure efficient and effective use of environmental resources. At the initial stage it is important to define the actors and their roles or motivations in the transition to green and circular economy. In this paper the major concern will be sustainable consumption and production (SCP) of environmental resources and efficient and effective management of waste, especially in urban settings.

A Preview of Waste Management Businesses

Several firms are already running waste management production systems which support GG/CE practices. Among a few of these firms are:

Kenya PET Recycling Company (PETCO), whose membership include some of the leading companies in Kenya¹, promotes recycling of PET plastic bottles. It is the industry's joint effort to self-regulate in PET recycling to minimize its impact on the environment. PETCO's stakeholders include those involved in the whole plastics value chain- raw material producers, convertors, brand owners, retailers, consumers and recyclers. It plays the industry's role of Extended Producer Responsibility (EPR), under which environmental costs of PET products are included in the market price of the products; thus shifting externalities from the government to the private sector. PETCO also engages the consumers through public education and awareness on environmental protection and the importance of PET recycling. It contracts and provides subsidies to recyclers who collect bottles from formal and informal collectors, and processes them in preparation for manufacture of new products such as polyester filaments for export, and new packaging products and bottles. It is estimated that the cost of recycling to the consumer is one (1) cent per bottle.

Safi Organics based in Mwea transforms rice chaff waste, collected from farmers, into organic fertilizer which is then sold to farmers and affordable prices. Use of the fertilizer reduces application of chemical fertilizers and hence improve soil fertility. It has also been established that the fertilizer increases crop yield by at least 30 percent.

¹ These companies include Coca Cola, Almasi Beverages, Uniliver, Bidgo, BioFoods, Naivas, Tuskys, Kevian, and Highlands Water.

EcoPost Ltd. recycles 100 tonnes of plastic waste per day; the waste collected from informal settlements, is turned into environmentally friendly durable outdoor furniture, and fencing and building materials. The company's posts do not rot or get eaten by termites. So far the company has directly created 50 jobs and another 5000 indirect jobs. It has recycled over 3 million kilograms of plastic waste, saving over 850 acres of forest in the process.

Sanergy Kenya collects human waste through franchising of single cubicle toilets for a fee to informal settlements, schools and commercial enterprises. Sanergy aims to provide high quality and affordable and effective alternative toilet facilities. The waste from the toilets is collected on a daily basis and processed using bio-digesters to produce energy from methane gas which is then used in the informal settlements. The residual matter is used to produce fertilizer and animal feed for sale.

Taka Taka Solutions collects plastics, cardboards, metals and glass for sale to recycling industries in Nairobi. Collection of these materials is done door to door in informal settlements by employed youth. To ease collection, clients have been trained on the separation of waste materials. Organic waste is converted to fertilizer, while recyclables are sold to recycling companies. The company also makes wine glasses and tumblers from recycled glass bottles. So far the company has been able to recycle 80 percent of the waste collected.

Gijenge Masters Ltd, owned by a young entrepreneur, makes pavers from plastic materials sourced from industries or recyclers. Plans are underway to diversify products to include construction poles, plastic timber and building blocks. Currently, the company employs 10 youths (five are permanent and five are on part time basis) who are well remunerated. Although demand for the company's products far exceed supply, scaling is limited by lack of larger space, machinery and labour.

Brightgreen company produces biofuel blocks using post-harvest waste from sugar cane bagasse, rice husks, macadamia husks and sawdust. The company produces about 30 thousand kilos of blocks daily. It has 20 employees, 50 percent of whom are women. The product is 30-50 percent cheaper than firewood and charcoal, has higher heat and last longer, is safe and provides healthier cooking environment.

Kenya currently generates about 3000 tons of e-waste annually; composed mainly of computers, printers, mobile phones, fridges, batteries and other devices which are normally mixed and disposed with other waste. Waste Electrical and Electronic Equipment Centre (WEEE Centre), established in 2010 is the first e-waste company in the region. It is based in Nairobi and engages in e-waste collection, dismantling, safe extraction, recycling, and disposal of complex and hazardous materials. E-waste processed by the Centre is collected from the private and public sectors, and from households through public collection campaigns. Increased campaigns and public awareness are required if the e-waste menace is to be eradicated.

Weeco Recycling Company is a Chinese firm set up in 2019 to recycle plastic waste. It has processing plants in Nairobi and Mombasa with capacity of recycling between 1000 and 5000 tonnes of plastic waste per month. It has the support of PETCO which provides a subsidy (recycling fee) of Kshs. 5.00 per kilogram of PET bottles collected and recycled by the company over and above the current purchasing price. Such modalities and means of extending subsidies should also benefit small informal companies, who should also be linked and networked with formal companies. This form of support would be good for growth of eco-businesses.

For these operating companies to grow their waste management businesses and thus play a larger role in environmental conservation, they will require technical and fiscal support from the National and County Governments, and other stakeholders. Some of the stakeholders which could assist these companies are KEPSA and KAM the apex bodies some these companies belong. KEPSA CO-Chairs the Kenya National Platform for Green Growth and Global Goals (PEG), which follows up on implementation

of SDGs and the Paris Climate Agreement. It can lobby for these companies through its membership in the national Sector Board on Environment, Water and Natural Resources which engages the government and other stakeholders in issues affecting the sector. Similarly, KAM could provide assistance to its members through the Centre for Green Growth and Climate Change which was established to promote the role of manufacturing in combating climate change and in promoting greener economy and climate change actions.

A Business Framework

Conventionally economic activities, production and consumption follow a linear trajectory; where materials are extracted, used to produce goods which are consumed and discarded thereafter. In the age of mass consumption this has led to unprecedented pollution and environmental degradation. Calls for have been made for new business models and frameworks which ensure economic activities promote green growth and circular economy. A typical circular economy is characterized by a product life cycle system shown in Figure 1.

In stage 1, firms engage in cleaner production, where all effort is put to ensure efficient use of raw materials, water and energy, including recovery and reuse of inputs, and generally adopting appropriate technologies that minimize generation of waste. In stage 2 the goods produced in stage 1 are put to better uses, and effort is made to extend the life span of the goods, and wastage is minimized or eliminated. The life of the products end in stage 3, but instead of being discarded are collected for remanufacturing. This happens in stage 4, where waste is recycled, recovered and reused. The results are green products which are available in stage 5 for further use in stage 1. Each of these stages is a value chain of the waste management business.

Figure 1: Sustainable Consumption and Production (SCP) Life-Cycle



Adapted from UNIDO (nd)

Sustainable consumption and production (SCP) are a holistic approach to minimize negative environmental impact of rampant consumption and production of goods and services². Scaling of SCP requires committed involvement of all stakeholders, including National and County Governments, consumers, the business community and the media. In the context of Figure 1, SCP:

- I. Improves sustainable and efficient management of resources at all the stages of the life cycle.

² Government of Mauritius (2013), Sustainable Consumption and Production Best Practices in Mauritius

- II. Provides opportunities for creation of new markets, green and decent jobs, and a natural resource management system that is efficient, equitable and welfare enhancing.
- III. Promotes reuse and recycling of waste.
- IV. Aims at doing more with less by reducing resource use, environmental degradation, waste and pollution along the life cycle.

In this paper a business framework will be outlined based on solid waste management, because solid waste is one of the biggest environmental menaces in urban areas today. Despite the contributions of many companies and other stakeholders, waste continues to pose environmental hazard in the country. For instance, about 600 thousand metric tons of plastics are produced annually, out of which 400 thousand metric tons are used locally. Of these only 9 percent are recycled and the rest are dumped in landfills, burnt or end up in water bodies. In Nairobi alone, it is estimated that 2,400 tons of solid waste is generated daily. About 20 percent of the waste is plastics and only 45 percent of the total waste is recycled which is short of the 80 percent mandated by NEMA³. This is happening despite a raft of existing legal, policy and institutional frameworks governing environmental protection at the national and county levels. However, although this is indicative of a major environmental concern, it also confirms substantial opportunities for eco-entrepreneurs.

Some of the reasons behind the slow progress towards GG & CE include:

- I. Inadequate information and awareness on GG/CE;
- II. Weak implementation of existing policies and laws;
- III. Outdated regulations which do not take into account GG/CE;
- IV. Inadequate compliance, coupled with weak enforcement of legislation;
- V. High investment requirements for green technologies; and
- VI. Rapid growth of urban population that is unmatched by efficient collection and disposal of waste.

The goal of the solid waste business framework is therefore to establish appropriate conditions for GG/CE, which can simultaneously protect the environment. Specific objectives of the framework are:

- I. Promote solid waste collection as a business;
- II. Enhance the growth of MSMEs and youth employment;
- III. Reduce the cost of waste collection;
- IV. Improve cleanliness in cities and urban areas; and
- V. Minimize or obviate the need for landfills.

Stakeholders in this process are the National Government, County Governments, MSMEs and other private sector actors, the youth, youth and women groups and citizens in general. Their roles may differ, but they all have a common stake in a clean environment and a vibrant economy. Outlined below are strategies and policies for a business framework that promotes sustainable consumption and production (SCP) in the context of GG/CE.

Raising Awareness and Training

Public awareness on the importance of environmental conservation and best practices in waste management systems should involve all the participants in the waste management value chain. Although work is ongoing in this area, it is critical that in the context of the business framework a big push must be made for a market based environmental conservation. The process should start with the waste generators, especially consumers and manufacturers (end product users), because unless they are on board the process will be a non-starter. Other stakeholders for inclusion in the process are the

³ World Bank (March 2021), “Battling Kenya’s Plastic Waste: Young Kenyan Woman is Transforming Waste into Sustainable and Affordable Building Materials”

youth, youth & women groups, convertors, business associations, residents' associations, and officials of national and county governments. Other than governance and best practices in waste management, public awareness and training may include best practices of SCP, green labelling, standards, and accreditation and certification for purposes of meeting market access requirements in external markets.

Classification of waste and means of handling before disposal is important in the management of solid waste. Waste is usual separated into wet waste, glass, metals, paper and paper board, plastics, non-recyclable and hazardous waste. They can be separately placed in labelled or colored coded bins. It is recommended that to facilitate better waste management:

- county governments should provide and locate big bins in strategic areas in large informal settlements, where designated youth groups can collect them;
- residents in gated communities should be encouraged to provide their own bins or the county should provide the bins at a monthly fee;
- residents' associations in affluent areas should work with their members to procure bins and place them in strategic locations. Where such areas are without associations, Kenya Residents Associations (KARA) should support them to form their own associations so that they are able to get better service delivery through improved organization and lobbying;
- business and industrial premises should have their own bins or the counties could provide bins in strategic areas around these premises for a fee; and
- county governments will collect and dispose non-recyclable and hazardous waste.

All the stakeholders should be trained on the sorting, segregation and disposal of the waste. Youth and youth groups, and other actors registered to handle waste should be trained all aspects of handling and transportation of waste, including composting and production of manure. They should also be trained on good business practices, as well as the importance of saving and concepts of investment.

Development of Enabling Policy and Legal Environment

Kenya has many policy and legal instruments aimed at environmental conservation and protection, however some are outdated or do not sufficiently address the problem of solid waste, while others are yet to be fully enacted for implementation. Waste Management Regulations (2006) applies to chemicals, pesticides, radioactive substances and waste management. Although it promotes reuse and recycling it places emphasis on landfilling of waste and is out of date. The National Waste Management Strategy (2015) makes all the appropriate recommendations, so does the National Sustainable Waste Management Policy (2021). The Sustainable Waste Management Bill (2021) addresses most of the issues discussed in the last two documents, but passes most of the actionable responsibilities along the waste value chain to the counties, e.g. development of waste collection centres and infrastructure for waste segregation, collection and reuse. It also requires all the "Extended Producers" of recyclable materials to take them back after use; an onerous responsibility in the short term. So far only PETCO has taken on this role of Extended Producer Responsibility (PER) for the PET bottles. More work and time would be required to encourage producers of other waste to take on the PER role.

Among the counties, only Nairobi County has a legal framework for waste management, The Nairobi City County Solid Waste Management Act (2015). Provisions of the Act have elaborate conditions for waste management, but although it makes reference to recycling and composting it places more emphasis on tipping of waste into county landfills. The City County should commit to a zero waste landfills policy and set a timeframe for achieving the target. This would require strong implementation of the Act, and amendments to provide for the timelines for each action required to achieve zero landfills. Other cities and counties with large urban areas should put in place legal framework along the lines of Nairobi.

Generally, if all the policies and legislation were effective there would be no mountains of waste, as is evident in most urban areas today. What is required is for County Governments to develop market responsive legislation, which ensure all relevant stakeholders are involved along the waste value chain. This process will lead to minimum requirements for landfills and the role of county governments will largely be to oversee implementation of regulations and only handle waste that cannot be recycled. Indeed, the motto of this business framework should be **“Zero Landfills”**.

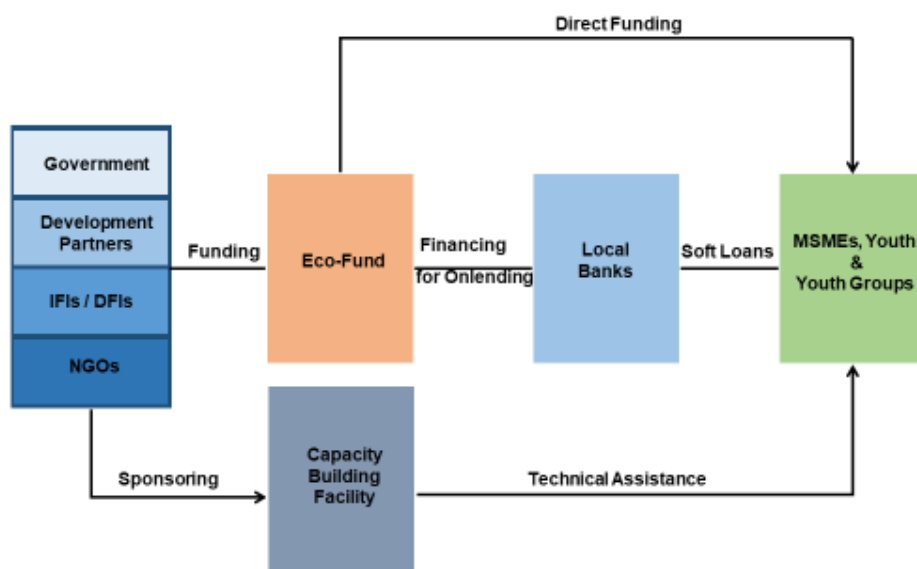
Supporting Access to Finance

One of the main challenges facing MSMEs is lack of finance. Most of these firms fund their investments through internally generated funds, which limits their growth. The government has tried to address the problem through creation of institutions such as Youth Enterprise Fund (YEF), UWEZO Fund and Women Enterprise Fund (WEF). The Micro and Small Enterprise Authority has also been established to promote the development of SMEs. It is difficult to track the impact of these institutions, but what is clear is that funding remains the major constraint on the growth of the MSME sector. Access to finance from the national institutions is limited by poor governance and bureaucratic application requirements; the funds in many instances are also viewed by recipients as public funds not necessarily to be repaid and are often misapplied.

Moreover, MSMEs in the green and other eco-innovation ventures have greater difficulties getting finance than other MSMEs. Even though the potential market for green products is large, access to finance is limited because the sector is viewed as young and immature; and there is little information for pricing risks associated with the business activities in the sector. Since availability of funding is critical for business development and commercialization of green products, both levels of government and development partners could bridge the gap through technical assistance, grants and soft loans. It is, however, often the case that lack of funding is due to poorly designed projects or the inexperience of the entrepreneurs. In this case, development of business skills and mentoring of the entrepreneurs on project development will be the most appropriate starting point for addressing the financing challenge.

This study recommends establishment of a revolving Eco-Fund to support eco-entrepreneurs, with contributions from the national and county governments, development partners, regional and international financial institutions, and local and international NGOs. The national Government could consider some funds from UWEZO Fund, YEF and WEF to the Eco-Fund. A capacity building facility will be set up, alongside the Fund, to support development of entrepreneurs’ business skills, including project and product development and financial management. The institutional structure of the Fund is outlined in Figure 2, but details of the structure will not be a subject of discussion in this paper

Figure 2: Kenya Waste Management Fund



Adopted from EU (2018)

Resources from the Fund will be disbursed directly to the MSMEs or indirectly through appointed local banks. Applications for direct disbursement will be considered for established medium enterprises which may need financial support for working capital or for scaling operations. Applications from micro and small enterprises, including the youth and youth groups are expected to be start-up capital and some working capital; and with time, their applications for enhanced working capital and resources for scaling will be considered.

Qualifying MSMEs will also be considered for technical support through the capacity building facility. Technical support and capacity building will be demand driven and the Fund/capacity building facility will consider outsourcing the function to third parties. Capacity building will be provided to MSMEs, the youth and youth groups at a fee or free of charge for deserving youth and members of youth groups.

Justification for appointment of local banks to on-lend the funds is two-fold; firstly, it is to enhance absorption of the funds, and secondly it is because banks are better at risk management. Indeed, some percentage of interests they are expected to charge will cover their risk management. The Fund manager will negotiate below market lending rates with banks; and the banks are expected to deduct their management fees from interest income and the balance should go to the revolving fund. Initially, funds will support the waste management programme and could be extended at the later stages to other areas of environmental conservation, such as forestry, water, energy, agriculture, etc.

Technical Assistance to MSMEs, the Youth and Women Groups

MSMEs, the youth and youth groups involved in SCP processes require business development assistance, especially capacity building in the form of skills development and transfer, business advisory services, product development and eco-innovation. As noted above some of these will be provided under the aegis of the capacity building facility.

In the more technical aspects, such as product development, innovation and skills and technology transfer, the capacity building facility will contract technical institutions such as the Kenya Industrial Research and Development Institute (KIRDI) and Kenya Bureau of Standards (KEBS) to provide the services. For example, KIRDI could provide training and technical know-how on industrial design of

products with low environment impact. KEBS and other certification organizations could provide training on technical requirements for green certification, standards and eco-labeling.

KEPSA and KAM will be expected also to assist the young eco-entrepreneurs and members of youth groups to participate in exchange programs with their members for the purpose of gaining experience in human and financial resource planning and management, project development, client relations, and any other administrative matters. The MSMEs and youth groups will form a consortium and build a media platform for enhancing their cooperation and for communicating among themselves in, among others, sharing of experiences and best practices in the industry. They should commit to cooperate in developing sustainable supply chains to boost GG & CE.

Conclusions and Recommendations

This study recommends a business framework anchored on market responsive policies and legislation which promote a zero landfills waste management system. The development and implementation of the framework should involve all the stakeholders in the value chain, the national and county governments and development partners. Clear policy, legislation and strategies should be formulated to entrench green growth and circular economy in consumption and production activities and processes. Among the key recommendations are:

- I. All those involved in the waste management value chain should undergo training on best practices in waste management. The training should include sorting, segregation and disposal of waste and best practices in green labelling, standards, accreditation and certification.
- II. Legal frameworks should provide for classification, handling, processing and disposal of waste, including clear roles and responsibilities of all the stakeholders in the chain.
- III. Youth and youth and women groups involved in the process should be provided financial and business management training.
- IV. National and County Governments should enact legislation to provide for zero landfills, with regulations providing timelines for achieving the goal.
- V. An Eco-Fund should be established with contributions from both levels of governments and development partners to provide affordable, accessible and predictable source of finance to deserving eco-entrepreneurs. Funding will be channeled directly to medium enterprises for working capital and scaling operations or through local banks for on-lending to micro and small enterprises, including youth and youth groups as start-up and working capital;
- VI. Along with the Fund, a capacity building facility will be established to provide technical support to MSMEs. The support could cover business and product development, innovation and skills development and technology transfer. Other areas of support could include, for example, industrial design from KIRDI and technical training on green certification, standards, and eco-labelling from KEBS and other technical organizations.
- VII. Business and industrial organizations will be encouraged to provide work experience to young entrepreneurs, through recommendations of KAM and KEPSA. Areas of emphasis in these exchange programs would be practical work experience in human and financial resource planning and management, project development, client relations and environmental conservation.