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A MULTI-STAKEHOLDER, MULTI-SECTORAL APPROACH TO A CIRCULAR PLASTIC ECONOMY IN EASTERN AFRICA

Oluwaseun Kolade, Muyiwa Oyinlola and Barry Rawn

1 Introduction

East African countries have experienced significant economic growth in the past decades. This has, among others, precipitated a significant increase in the quantity of plastic products imported into the region (Oyake-Ombis et al., 2015). Between 2016 and 2019, the volume of plastic wastes increased by 28% in Kenya, 48% in Tanzania, 94% in Ethiopia, and 45% in Uganda (Regional Economic Department Kenya, 2022). The challenge of plastic pollution is exacerbated by societal lock-in into the linear economic habits of consumption and the inadequacy of infrastructures for management of plastic wastes. Added to this are the challenge of the institutional environment and the inadequacy of policies and regulations to effectively grapple with the growing menace of plastic wastes in the region.

The challenge of plastic waste in East Africa reflects a wider trend across the continent, where economic growth has been observed to be directly proportional to the volume of plastic wastes (Babayemi et al., 2019). Therefore, as growth continues to gather pace on the continent, the imperative of conversations about sustainability and circular economy becomes more urgent. While there are inspiring examples of innovations for the circular plastic economy on the continent, the overall picture is mixed, mainly because stakeholders continue to work in silos and therefore unable to harness the collective synergy for maximum impact (Kolade et al., 2022). In order to break the lock-in to the linear economy and accelerate the transition to the circular economy, stakeholders across public, private and the third sector must pool resources and knowledge together to develop and promote new innovations.

The East African region is undergoing structural economic transformation and growth. Following the slowdown of the economy precipitated by Covid-19

pandemic, East African countries are currently rebounding. This is driven by increasing movement of labour and productivity from agriculture to higher value sectors of manufacturing and services. In Tanzania, the industrial sector accounted for 0.6 of the 2.1% gross domestic product (GDP) growth in 2020, and 2.6 of the 6.1% growth for Ethiopia (African Development Bank, 2021). While national governments across East African countries are enacting policies and regulations to stem the problem of plastic waste, the results have been generally modest and mixed. Rwanda, for example, has had considerably bigger success in implementing plastic bans, compared with countries like Kenya and Uganda. Some stakeholders have argued that variations in successful implementation of policies can be explained by differences in levels of business power, given that plastic manufacturers are fewer and smaller and therefore limited in economic and political leverage in Rwanda (Behuria, 2019). Others have noted that business power is not a sufficient explanation of the variations because the local and external environments also have significant impacts on successful innovations of environmental policies.

The rest of this chapter is organised as follows: First, we provide an overview of three country contexts of Kenya, Rwanda and Uganda, to highlight key issues and peculiarities in the policy and regulatory landscape. We then describe the methodological approach, before presenting and discussing the findings from focus group discussions and in-depth interviews held with selected participants across the East African region. This chapter concludes with a summary of key insights from East Africa that can help drive the transition to a circular plastic economy in Eastern Africa.

2 Focal country contexts

The following sections provide an overview of policy and political contexts of circular plastic activities and outcomes in three focal countries in the East African region. A summary of these is presented in Figure 9.1. It is important in global conversations about the circular economy to understand the differences as well as similarities across countries. This is necessary for better policy outcomes achieved through exchange of best practices across countries and design of bespoke policies that address specific challenges and needs.

2.1 Kenya

Waste generation is generally low in Kenya, at an average of 11 kg per capita annually, compared with the global annual average of 29 kg per capita (Griffin and Karasik, 2022). However, about 92% of solid waste is mismanaged, partly due to the absence of collection facilities in rural areas and increasing leakages from urban centres. The key sectoral contributors to plastic waste are packaging, textiles and automotive tyres. In the last 10 years, waste generation (4 Mt/year)

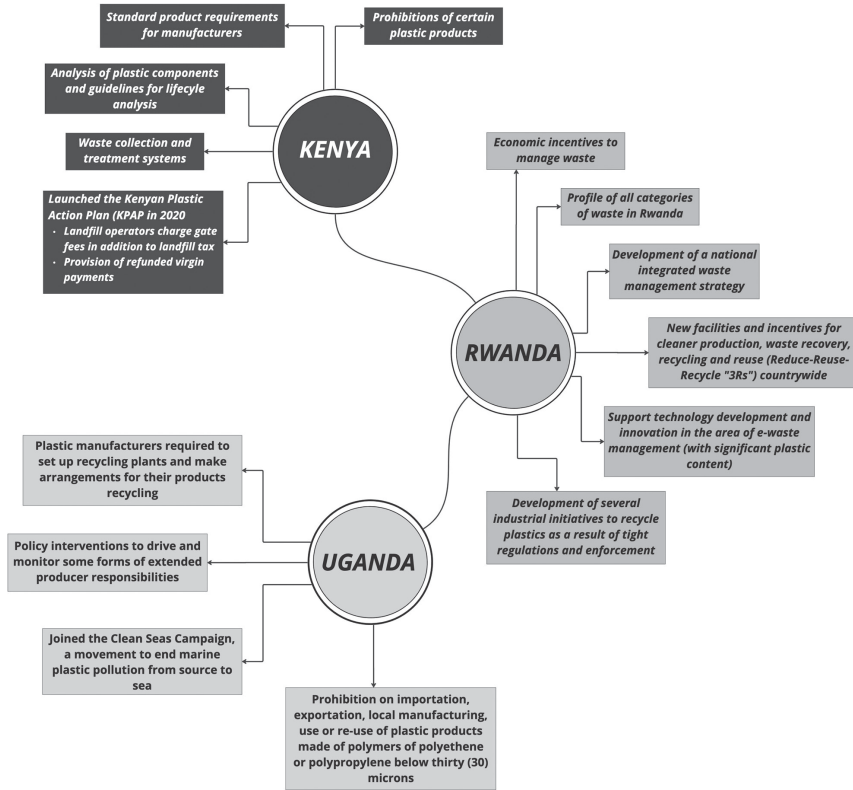


FIGURE 9.1 Overview of circular plastic policies in Kenya, Rwanda and Uganda

has increased greatly with Kenya's rapid urbanisation and is expected to double by 2030. Currently, waste management structures fail to address the magnitude of the problem. In the capital region of Nairobi, only about 20% of the solid waste (1 Mt/year) is recovered for recycling. The remaining 80% is left on the streets. Existing landfills have by far exceeded their capacities to safely dispose of the waste volumes, thereby degrading the environment and adversely affecting human health.

Kenya's policy response to the problem of plastic waste has been organised around three key areas: prohibitions of certain plastic products; standard product requirements for manufacturers; and waste collection and treatment systems (UNIDO, 2022), including recycling. Kenya is one of the few countries in Africa which has banned the use of single-use plastic bags in 2017. However, the issue of plastic waste management is associated with the general poor state of solid waste management (SWM) and the poor infrastructure. Kenya national SWM policies, environmental policy and SWM strategy are aligned to regional and global targets but currently fail to achieve them. Findings from a recent review

work highlighted the need for a clear (1) coordination mechanism for policy implementation and evaluation; (2) alignment among the different provisions and synergy in their implementation; (3) enhancing institutional capacity (infrastructural, financial and human resources) of key actors in the government sector for successful implementation of the policies.

The Kenyan Bureau of Standards (KEBS) publishes and oversees the enforcement of standards requirements for the manufacture of plastic products. The standards framework includes provisions for analysis of plastic components and guidelines for life cycle analysis. Recently, regulators have given increasing attention to requirements for biodegradability and compostability of plastic products (UNIDO, 2022). In response to conversations initiated by the Kenyan government about extended producer responsibility (EPR), the Kenyan Association of Manufacturers (KAM) launched the Kenyan Plastic Action Plan (KPAP) in 2020 (UNIDO, 2022). Under KPAP, landfill operators charge gate fees in addition to landfill tax imposed by public authorities. In addition, KPAP also provides for “refunded virgin payments”. Under this, producers whose products consist of mainly virgin materials pay a fee that is used to refund producers who use mainly recycled materials (KAM, 2019).

In addition to the financial elements, the KPAP also comprises six other key elements: recycling options, segregation at source and waste collection, product design for enhanced recycling, consumer awareness campaigns, biodegradable plastics and integration of the informal sector (KAM, 2019). KPAP effectively recognises the importance of a whole-value chain approach to a circular plastic economy in Kenya and East Africa. There are specific measures aimed at the design and production stage, including the financial instruments such as the refunded virgin payments. The inclusion of design for enhanced manufacturing also underlines this increasing focus on the earlier stages of the plastic value chain. The plan also highlights the importance of two categories of stakeholders that are not typically given prominence in discussions about the circular plastic economy: consumers and informal waste collectors. These groups of stakeholders are critical for successful transition to a circular plastic economy. Like producers, consumers also need incentives to embrace new, circular habits of consumption and therefore contribute to breaking the lock-in to the linear economy. Similarly, infrastructures on their own are inadequate for effective management of plastic wastes without the critical contributions of human actors, such as informal waste reclaimers, who make the infrastructures work.

2.2 Rwanda

The rapid increase of Rwanda’s population has stretched the current infrastructure resulting in many complex problems regarding municipal solid waste (MSW) management. These are shared problems with other low income (LI) and low and middle income (LMI) countries such as inadequate service provision, limited

recycling activities and insufficient/ineffective landfill management. In Kigali, recent estimates suggest a production of around 2 kg of waste per person, per day, with an average content of 1.5% of plastic. Although integrated waste management strategies at national and local levels are still missing, the government is taking actions against plastic pollution to promote environmental awareness and find credible solutions to eradicate plastic waste. In 2008, the country banned importation and use of polythene bags and started environmental campaigns to monitor the ban. Rwanda's example shows how decisions taken at a national level and enforced proactively can cut down on the use of plastics. The experience in Rwanda contrasts with the otherwise increasing plastic consumption in other African countries. The country therefore bucks the trend linking economic growth with increasing amounts of plastic wastes. Between 2008 and 2017, Rwanda experienced an increase in GDP per capita from \$1229 per year to 2080. Roughly within the same period, between 2007 and 2016, the importation of finished plastics declined from about 2700 tonnes in 2008 to 175 tonnes in 2016. This provides a good example of sustainable, green growth.

The Rwanda's National Environment and Climate Change Policy, revised in 2019, identified seven essential objectives for achieving a sustainable and green nation including (1) the development of a national integrated waste management strategy; (2) economic incentives to manage waste; (3) new facilities and incentives for cleaner production, waste recovery, recycling and reuse (Reduce-Reuse-Recycle "3Rs") countrywide; (4) a profile of all categories of waste in Rwanda; and (5) supporting technology development and innovation in the area of e-waste management (with significant plastic content). The implementation plan aims at setting up a "profile of all categories of waste used in Rwanda" and develop an "integrated waste management strategy" between 2019 and 2022. The tight regulatory and enforcement atmosphere in Rwanda, combined with higher material import costs due to its land-locked status, has encouraged the development of several industrial initiatives to recycle plastics.

It can therefore be seen that the Rwandan approach to plastic waste management is a mix of command-and-control policies and market-based instruments (Xie and Martin, 2022). The command-and-control elements comprise bans of single-use plastics and ethylene-based products, as well as standards regulating the manufacture of plastic products in-country. The market-based instruments include taxes, fees and subsidies. These provide incentives for green manufacturing and mobilisation of funds to run and maintain plastic waste management systems and infrastructures.

2.3 *Uganda*

While the latest data is not available, as of 2019, Uganda was reported to have imported 8,768,103 tonnes annually (Wandeka et al., 2022). A substantial portion of plastic wastes in Uganda is related to packaging. According to recent estimates,

plastic packaging constitutes about 90% of all packaging in Uganda, and about 600 tonnes of plastic packaging is consumed daily (Wandeka et al., 2022). Unlike Rwanda, Uganda has not imposed an outright ban on single-use plastic. Instead, under the standard requirements published by the Ugandan National Bureau of Standards (UNBS), Uganda “prohibits the importation, export, local manufacture, use or reuse of categories of plastic carrier bags or plastic products made of polymers of polyethylene or polypropylene below thirty (30) microns” (UNBS, 2021). Even in the absence of an outright ban, compliance is a significant challenge for the Ugandan authorities. The UNBS reported that following an inspection of 47 factories it undertook in 2021, 21 of them were found to be non-compliant and compelled to suspend production until they took corrective action (UNBS, 2021).

In addition to the partial ban described above, Uganda has also launched policy interventions to drive and monitor some forms of EPRs. Under the Ugandan requirements, plastic manufacturers are required to set up recycling plants and make arrangements for their plastic products to be returned for recycling (NEMA Uganda, 2020). At the international level, Uganda, in June 2021, joined the Clean Seas Campaign, a global movement of more than 60 countries committed to ending marine plastic pollution from source to sea (UNEP, 2021). Uganda is also working closely with the neighbouring countries of Tanzania and Kenya to tackle the growing menace of plastic pollution in the world’s largest tropical lake, Lake Victoria, where microplastic is causing a huge havoc to marine ecosystem as they carry harmful chemicals and pollutants, in addition to direct threats on fish (The Flipflop Project, 2022).

3 Methodology

In addition to secondary sources such as policy documents and reports, this chapter draws from qualitative primary data obtained through focus group discussions and semi-structured interviews of key stakeholders. A focus group discussion for five participants from technology startups across East Africa (Uganda, Kenya and Rwanda) was held in October 2020. This was held online using videoconferencing, recorded and transcribed. A briefing on the objectives of the DITCh plastic project preceded the focus group meetings to obtain relevant consent. Participants were then allowed to introduce themselves and their roles within the sector.

Following the completion of the focus groups, one participant was identified as an ideal candidate for further interviews as the insights they provided demonstrated their expertise and experience. Interviews were conducted online using videoconferencing, and all interviews were transcribed and recorded after receiving relevant consent from the participants. The transcripts of the focus group discussion and in-depth interviews were fed into NVivo 12 software where emerging insights and ideas were coded and thematically analysed.

4 Findings and discussion

The transcripts of the focus group and in-depth interviews highlight insights and perspectives on the following key themes: policy interventions and outcomes, challenges and opportunities for waste collection and private and informal sector contributions.

4.1 Policy interventions and outcomes

One of the key areas of interest in discussions about the progress of the campaign for a circular economy on the African continent is the importance of policy interventions and political will on the part of national governments to launch and implement necessary interventions. These interventions fall under two broad categories: prohibitions and incentives. Participants in the focus group reflected on the impact of single-use plastic ban in Rwanda:

If we look at the family we start to get a grasp of how this problem is happening. But even in Rwanda, where we ban single use plastics, the invitation to pursue alternative packaging has actually been slow.

Focus Group, October 2020

While Rwanda is often held up as an exemplar of successful government policies on environment and sustainability, the above comment from the focus group underlines the limitations of bans and prohibitions. Instead, policymakers need a carrots and sticks approach, where fines and bans are complemented with incentives and rewards for alternative production approaches and consumption habits. In line with this, another focus group participant highlighted the importance of government policies to drive market demands for circular products:

There sometimes need to be some sort of push for the demand side, that's encouraged by the government. So one thing that came up is that if we could just have some legislation that requires a certain amount of recycled content in construction, for example, can make a huge difference.

Focus Group, October 2020

As other studies have found, strategic public procurements and tax incentives can be used by governments to drive demand and encourage producers to use recyclates, rather than virgin materials, for the manufacture of plastic products (Hart et al., 2019). These “carrots” work better along with “sticks” like bans and fines. The use of incentives applies to producers, consumers and ordinary citizens. In this respect, digital innovations, such as blockchains, have been used in both developed and developing countries to mobilise and incentivise citizens to actively participate in the drive towards a circular economy (Ajwani-Ramchandani

et al., 2021). In Spain, a virtual reward token was created to incentivise families to recycle and a webapp was created to enable them record recycled plastics (Gibovic and Bikfalvi, 2021). The need for policy interventions such as public procurement assumes greater strategic significance considering that recycling of certain polymers is not ordinarily profitable, even with high rates of plastic waste collection (Galati and Scalenghe, 2021).

4.2 Challenges and opportunities for waste collection

The respondents highlighted a wide range of logistical, practical and cultural challenges that are hampering efficiency of waste collection across their respective countries:

I would say the biggest challenge is the culture. The culture of waste handling. We have companies that are doing waste collection, but still they do it unprofessionally, so that is a big challenge. We have no waste management professionals in Rwanda. That is a big challenge, I would say.

Rwanda Civil Society Focus Group, October 2020

I think it's for me mostly related to the waste separation. If you want to add value two ways, if you want to recycle the waste, we should separate them, yeah, that's my point.

Rwanda Civil Society Focus Group, October 2020

This (waste management) sector is really characterised by inefficiency and irregularities in waste collections. There is very low waste collection coverage and the other big problem is that there is a lack of household data (in Uganda). You know, there is some data out there, some statistics, but household data and which houses?

Uganda Focus Group, October 2020

The feedback from the focus group participants reinforces the argument for a multi-sectoral, multi-stakeholder approach to sustainable plastic waste management. Top-down policies and regulations are not sufficient, in isolation. Public and private sector organisations need to work in dynamic synergy with the academia and non-governmental organisations (NGOs) to change culture and attitudes to plastic waste using a mix of public awareness campaigns, policies and innovations to change minds and redirect entrenched linear habits towards circularity. In order to address some of the key challenges highlighted above, a number of tech startups are stepping up with innovative ideas and products to tackle the challenges. This is exemplified by the initiatives and contributions of Yo Waste, a Kampala-based startup whose platforms and products are helping to connect households and

businesses with other waste management players. They are doing this through three key platforms and products, as the founder summarises:

Yo-Waste Connect: For households and businesses to schedule waste pickup

Yo-Waste Hauler: For drivers and those who collect the waste. They enter data on the kind of waste collected and indicate when a job is completed. Yo-Waste plans to sell this data to governmental organisations or MNCs like MTN & Airtel.

Yo-Waste Cloud Platform: For bigger companies that have multiple pickup points and want to sign up as customers and for larger waste management companies who sign up to offer services. There is a dashboard for visualizing, managing and assigning job.

CEO, Yo Waste, Uganda, November 2020

Yo Waste's products exemplify the potentials of digital innovations in the circular plastic campaign. By linking up different stakeholders via digital platforms, innovators like Yo Waste are able to drive efficiency, reduce transaction costs and create new opportunities for waste collectors and recyclers (Oyinlola et al., 2022). In other words, digital innovations can invigorate the ecosystem for the circular plastic economy, thereby helping to realise the full benefits of government policy interventions (Kolade et al., 2022).

4.3 Private and informal sector contributions

Both focus group participants and interview respondents emphasised the importance of non-governmental actors, especially corporate actors, in the drive towards a circular economy. Equally important, there is a recognition for the role of informal actors, whose contributions are currently not optimally realised due in part to weak organisation and lack of empowerment:

We were engaging some international investors that come from the private side, but also some institutional investors who have large scale climate change or kind of funds to protect the environment and they had a discussion about the investment climate for these types of things and it was actually our international investor who highlighted this pointed out that.

Rwanda Academia Focus Group, October 2020

A lack of investable private projects, and sometimes this is complicated, complicated by the involvement of the informal sector being so important. So organising that informal sector seemed like a challenge that the investors were interested in.

Rwanda Academia Focus Group

And maybe then you also encourage the informal sector to collect more waste. And also it's a very important fact to understand that most of the people that are in the informal sector are just unemployed people and also very very poor usually ..., they are unemployed they are poor and waste collection is maybe informal ... I think maybe if you do it in this way that you also have maybe a return back scheme for maybe the bigger plastics, Maybe that could also benefit these informal sectors somehow.

Rwanda Civil Society Focus Group, October 2020

As the comments above show, public policy must have clear links with private and third sector contributions (Mugambe et al., 2022). Increasingly large corporations and manufacturers are giving greater attention to sustainability and circularity agenda. This is partly as a result of growing public awareness and scrutiny of large corporations about commitments to environmental and sustainability issues. The contributions of big corporations and plastic manufacturers should not be measured only in terms of outward-facing investments, because this effectively leaves the responsibility on other actors to clean up the mess brought about by linear and non-environment-friendly production practices. Instead, big corporations should also be scrutinised in terms of internal innovation, experimentation and adoption of circular business models in design, production and value delivery (Bocken et al., 2018). Plastic manufacturers need to rethink their value propositions and focus attention on using minimal resources for a maximum period of time in the process of delivering optimal value for end-users (Geissdoerfer et al., 2020).

Finally, as the focus group participants highlighted, the contributions of the informal sector cannot be understated in the drive towards the circular plastic economy. These otherwise invisible and unrecognised actors, who are typically driven to these roles through sheer necessity, are critical to successful transition to a circular economy through a wide range of activities including waste collection and recycling (Korsunova et al., 2022). With the right support and interventions, they offer a promising and effective pathway to an inclusive circular plastic economy, especially in low- and middle-income countries where waste collection and recycling facilities are limited. Interventions can be aimed at reducing barriers to waste collection, improving income opportunities for informal waste collectors and recyclers and increasing quality of materials (Velis et al., 2022). These empowerments will give them economic visibility and dignity, in order to maximise their potentials in the circular economy ecosystems.

5 Conclusion

This chapter highlights the critical importance of a multi-stakeholder approach, across a whole spectrum of the economy and society, to a circular plastic economy in the East African region. This chapter begins with a detailed discussion of

the policy and contextual peculiarities of three East African countries: Kenya, Rwanda and Uganda. It describes the varying levels of policy success and the country-specific contexts that illuminates this. This chapter then presents primary qualitative data obtained from focus groups and in-depth interviews of participants across the East African region. This data highlights three important points: Firstly, targeted policymaking and political will make a significant difference in the drive towards a circular plastic economy, because these set the tone for other stakeholders in the private and third sectors. However, the results of policy interventions are mixed across countries. Rwanda appears to show the highest levels of policy success, but even the Rwandan government has had to grapple with entrenched cultural barriers and attitudinal obstacles to the circular economy. The success of policy interventions in countries like Uganda and Kenya is influenced by a range of geographical and political factors. Secondly, digital innovators are making significant impacts by using digital tools and platforms to mobilise and link key stakeholders and actors in the circular plastic ecosystem. Finally, the potentials of the private and informal sector actors are currently underutilised. With better organisations and the right incentives, informal sector operators can be better empowered to contribute to successful transition to a circular plastic economy across the East African region.

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