

Policy Insights

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Unlocking the Circular Economy Potential of African Island States

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African perspectives
Global insights

Executive summary

African island states are heavily dependent on the extraction of natural resources, while accumulating considerable amounts of waste. As these states and others in Africa pursue the development of sustainable Blue Economies, there are significant opportunities to adopt and scale circular economy practices. The three principles of a circular economy are: the elimination of waste and pollution, the circulation of products and materials (at their highest value), and the regeneration of nature. Across these three pillars, numerous good practice examples are emerging among African island states, but appropriate policy action and multi-stakeholder partnerships are needed if these are to be scaled. This policy insight highlights five key action areas: anchoring the circular economy within policy frameworks and regulations; increasing awareness of circular economy principles and methods; using waste management as an opportunity to improve material stock management; putting natural restoration at the centre of the economy; and incentivising businesses to transition to circular practices.

Introduction

The circular economy is defined as an ‘economic system that replaces the “end-of-life” concept with reducing, alternatively reusing, recycling and recovering materials in production, distribution and consumption processes’.¹ The circular economy is increasingly identified as being central to achieving sustainable development.² The three principles of a circular economy are: the elimination of waste and pollution; the circulation of products and materials (at their highest value); and the regeneration of nature. With this concept becoming more prominent, a number of global circular economy initiatives have been launched. These include the [Global Alliance on Circular Economy and Resource Efficiency](#), the [Global Plastic Action Partnership](#), the [Circular Electronics Action Partnership](#) and the [Global Battery Alliance](#).³

In many African countries, the circular economy is still a nascent concept.⁴ Nevertheless, there is growing recognition of its importance to the continent’s development. Two regional circular economy networks have been established – the [African Circular Economy Alliance](#) and the [African Circular Economy Network](#) – while the concept is also coming more to the fore in regional forums and institutions such as the African Ministerial Conference on the Environment and the African Development Bank. The circular economy has also

1 Julian Kirchherr, Denise Reike and Marko Hekkert, “Conceptualizing the Circular Economy: An Analysis of 114 Definitions”, *Resources, Conservation and Recycling* 127 (2017): 221-232.

2 Brais Suárez-Eiroa et al., “Operational Principles of Circular Economy for Sustainable Development: Linking Theory and Practice”, *Journal of Cleaner Production* 214 (2019): 952-961.

3 World Economic Forum, “Circular Economy and Material Value Chains”, <https://www.weforum.org/projects/circular-economy/>

4 Peter Desmond and Milcah Asambah, “Accelerating the Transition to a Circular Economy in Africa: Case Studies from Kenya and South Africa”, in *The Circular Economy and the Global South: Sustainable Lifestyles and Green Industrial Development*, eds. Patrick Schröder et al. (New York: Routledge, 2019), 152-172.

been highlighted as a priority area for cooperation between the AU and the European Commission.⁵ Circular economy initiatives on the African continent have mainly been focused on waste management and, to some extent, renewable energy, while there is growing investment in regenerative ecosystem restoration activities. Within the region, South Africa has been one of the leaders in adopting circular economy principles in sectors such as waste management, renewable energy and manufacture.⁶ Other countries such as Nigeria, Rwanda, Ghana, Algeria, Morocco and Egypt have undertaken research and begun implementing projects and programmes, particularly related to waste management and renewable energy.⁷

This policy insight explores opportunities related to a circular economy for African island states. African island states have experienced a dramatic increase in resource extraction and waste generation in recent decades, while at the same time facing growing challenges in the context of climate vulnerabilities and ambitions to develop sustainable blue economies. The policy insight highlights five key action areas that should be prioritised in integrating the circular economy concept into these states' sustainable development agendas.

The state of the circular economy in African islands

An analysis of circular economy baselines for African islands⁸ shows that they are heavily dependent on the extraction of natural resources and accumulate considerable amounts of waste.⁹ Domestic resource extraction in these island states has increased over the past 40 years – and by more than 500% in countries such as Cabo Verde and Comoros.¹⁰ Marine living resources, in particular, are being harvested at significant scale, with an annual production of around 500 000 tonnes in these islands.¹¹ The aquaculture sector in the Indian Ocean Commission countries¹² alone is estimated at EUR 23.3 million (\$24.5 million) annually.¹³ Activities that can improve life cycles in the countries involved in aquaculture include waste management and water treatment, both of which are in need of improvement. In terms of material flow, more developed African island states such as Mauritius and Seychelles have higher material consumption and waste per capita than

5 European Commission, Directorate-General for Environment, "[Environmental Cooperation: European Commission Joins Forces with African Partners to Promote Circular Economy](#)", February 16, 2022.

6 Aifani C Tahulela and Harry H Ballard, "Developing the Circular Economy in South Africa: Challenges and Opportunities", in *Sustainable Waste Management: Policies and Case Studies*, ed. Sadhan Kumar Ghosh (Singapore: Springer, 2020) 125-133; Paul T Mativenga et al., "Circular Economy Ownership Models: A View from South Africa Industry", *Procedia Manufacturing* 8 (2017): 284-291.

7 Desmond and Asamba, "Accelerating the Transition".

8 Including Comoros, Cabo Verde, Guinea-Bissau, Mauritius, Madagascar, Seychelles and São Tomé and Príncipe.

9 Mialy Andriamahefazafy and Pierre Failler, "Towards a Circular Economy for African Islands: An Analysis of Existing Baselines and Strategies", *Circular Economy and Sustainability* 2 (2022): 47-69.

10 International Resource Panel, "Global Materials Flow Database", <https://www.resourcepanel.org/global-material-flows-database>.

11 UN Food and Agriculture Organization, "Fisheries and Aquaculture: Statistics", <https://www.fao.org/fishery/en/statistics>.

12 Comoros, Madagascar, Mauritius, Réunion (an overseas region of France) and Seychelles.

13 Christophe Breuil and Yann Yvergniaux, "Performances socio-économiques du secteur des pêches et de l'aquaculture dans l'espace COI" [Socio-economic Performance of the Fisheries and Aquaculture Sector in the Indian Ocean Commission Region] (FAO, Rome, 2017).

developing African island states.¹⁴ They also have a high amount of plastic usage per capita, with plastic pollution being a major threat to the ecosystems of African island states.¹⁵

Existing circular practices in waste management

Initiatives to reduce consumption and waste

The imperative to ‘reduce’ in a circular economy refers to both the design and the utilisation of products. In the pre-use stage, various eco- or sustainable design principles are applied to ensure that products last longer, have multiple uses or life cycles, and require less materials. With regard to utilisation, ‘reducing’ speaks to the need to consume fewer products and ensure that those products that are procured are used for longer periods, rather than being quickly discarded.¹⁶

There are multiple opportunities to consider the design and use of products in a way that reduces both demand for inputs and the resultant consumption and waste

For African islands, there are multiple opportunities to consider the design and use of products in a way that reduces both demand for inputs and the resultant consumption and waste. In recent years there has been a growing emphasis on reducing plastic use and waste. Islands such as Seychelles have implemented environmental education programmes on reducing plastic consumption and waste generation, and ensuring better waste management. Mauritius has put in place a financial incentive to reduce the consumption of plastic through an excise duty on non-biodegradable plastic food containers.¹⁷ The scheme imposes a tax on single-use plastic food containers, and has achieved a significant reduction in the use and production of these products. Various island states such as Cabo Verde, Madagascar and Seychelles have imposed outright bans (with certain limited exceptions) on plastic bags, polystyrene boxes, plastic utensils and plastic straws.¹⁸

14 Siru Sihvonen and Thomas Ritola, “Conceptualizing ReX for Aggregating End-of-Life Strategies in Product Development”, *Procedia CIRP* 29 (2015): 639–644.

15 Andriamahefazafy and Failler, “Towards a Circular Economy for African Islands”

16 Sihvonen and Ritola, “Conceptualizing ReX”.

17 Prakash Kowlessar, “An Overview of Circular Economy in Mauritius”, in *Circular Economy: Global Perspective*, ed. Sadhan Kumar Ghosh (Singapore: Springer, 2020), 269–277.

18 Sooyun Chu, “Seychelles: Ban on Plastics Takes Effect”, Library of Congress, 2017.

Waste collection and valorisation as a ‘reuse’ circular economy strategy

In a circular economy, the concept of ‘reuse’ covers various strategies, from resale and direct reuse to repurposing and repair.¹⁹ For African islands, the reuse strategy is key in ensuring circularity and reducing reliance on imports.

Efficient and well-organised waste management systems are crucial in supporting reuse of products and materials. Several African island states have established initiatives that ensure the valorisation of waste collection.²⁰ For example, companies in Comoros and Madagascar (Mouniat Compost and Madacompost) collect municipal organic waste for sorting and recycling. Mauritius has established a home composting scheme that provides compost bins to households to encourage source segregation of waste and promote composting.²¹

Other schemes mobilise the ‘reuse’ strategy. In Mauritius, initiatives such as The Good Shop specialise in resale, repair and repurposing. They collect objects considered as waste and then either recover constituent materials or repair and re-sell products. Many of these companies make products available for a modest price after being customised for a second life. In Madagascar, a company (Fakofia) collects metal and plastic waste to resell components to local handcraft businesses.

TABLE 1 JOINT STATEMENT INITIATIVE ON E-COMMERCE	
Recycling activity	Country/initiator
Turning glass bottles into sand and material for construction and decoration	<ul style="list-style-type: none"> • Cabo Verde (Tinenê factory), • Seychelles (Seychelles Breweries) • Mauritius (Plankton Recycling Co-operative Society)
Transforming plastic waste into tiles and road construction material	<ul style="list-style-type: none"> • Cabo Verde (Santo Antão Island) • Guinea-Bissau (Binedou Global Service) • Madagascar (Fakofia)
Recycling household waste and old tyres into tiles and bricks	<ul style="list-style-type: none"> • Comoros (Association 2 Mains) • Madagascar (Madacompost)
Recycling discarded clothing material and plastic bottles into bags, shoes and clothes	<ul style="list-style-type: none"> • Comoros (Ylang Création)
Transforming organic waste into compost and natural pesticides	<ul style="list-style-type: none"> • Comoros (Mouniat compost) • Madagascar (Madacompost)

Source: Pierre Failler, “Circular Economy in African and Indian Ocean Island Developing States: Existing Strategies and State of Play” (Indian Ocean Commission, Ebene, 2021)

19 Sihvonen, and Ritola, “Conceptualizing ReX”.

20 The term “waste valorisation” refers to any industrial processing activities aimed at reusing, recycling or composting from waste, useful products or sources of energy.

21 Government of Mauritius, Maurice Ile Durable, “Schemes”, <http://mid.govmu.org/portal/sites/mid/CompostScheme.htm>.

Recycling strategies have been widely adopted in African islands at different levels. Recycling has been integrated into various countries' waste management policies, including through the creation of recycling centres. Indian Ocean Commission countries have also developed a regional strategy targeting specific types of waste, notably plastic, batteries, oils and tyres. Recycling activities also take place within communities (Seychelles), in the private sector (Mauritius, Madagascar, Guinea-Bissau and Comoros) and at the state level (Cabo Verde) (see Table 1).

Recovering energy and e-waste parts as an emerging circular economy sector

The 'recover' strategy in a circular economy involves retrieving valuable or hazardous material during the post-use phase. For example, this strategy involves energy or metal compound recovery processes. A common practice in less developed countries such as Madagascar, Comoros and Guinea-Bissau is the recovery of metal and other components by informal recyclers.²² These recovery activities target different types of metal, as well as e-waste. In more advanced countries such as Mauritius, the private sector is a key player in developing recovery activities. In Mauritius, private companies are involved in recovering energy and metal from old batteries and e-waste. They have developed processes to collect and recover material from e-waste, with these materials then being reused for refurbishment purposes or for an entirely different use. While such practices can play an important part in circular economy practices, governments should regulate them better and mitigate their potential negative impacts on human health and the environment.

The 'natural regeneration' aspect of the circular economy

A key feature that makes the circular economy an innovative yet grounded opportunity is the principle of natural regeneration. This entails 'the promotion of the self-renewal capacity of natural systems with the aim of reactivating ecological processes damaged or over-exploited by human action'.²³ Healthy ecosystems provide a range of ecosystem services that support communities and broader society. It is therefore important that these ecosystems are protected and restored.

22 Katia Ferrari et al., "An International Partnership for the Sustainable Development of Municipal Solid Waste Management in Guinea-Bissau, West Africa" (Paper, XXI Summer School "Francesco Turco", Naples, 2016); Albin Lazare and Fabricia Devignes, "Etat des lieux du secteur informel de déchets en Afrique et dans les Caraïbes" [State of Play in the Informal Waste Sector in Africa and the Caribbean] (Europe Enda and Gevalor, Dakar, 2010).

23 Piero Morsetto, "Restorative and Regenerative: Exploring the Concepts in the Circular Economy", *Journal of Industrial Economy* 24, no. 4 (2020): 763-773.

Marine protected areas should be expanded, while ensuring opportunities for the inclusive development of local communities

Island states have small yet highly diverse terrestrial ecosystems, as well as vast and rich marine ecosystems. These ecosystems are critical to the wellbeing of island societies and economies, yet at the same time face a range of threats, including overharvesting of natural resources, pollution, habitat destruction and climate change. In a circular economy, various biodiversity conservation initiatives are considered key components of the economy. African islands generally have well-developed governance systems for the management of fisheries and marine resources, as well as existing networks of marine protected areas. However, much can be done to improve monitoring and compliance to ensure that existing policies are implemented and regulations adhered to. Marine protected areas should be expanded, while ensuring opportunities for the inclusive development of local communities and reinforcing processes for effective monitoring and management of these areas. There are also significant opportunities to scale the numerous initiatives that have been established on African islands to restore critical habitats such as mangroves, seagrass beds and coral reefs. Existing restoration activities have generated important information on best practices that should be adopted more broadly.

TABLE 2 MEASURES TO PROTECT AND RESTORE MARINE ECOSYSTEMS

Initiatives	Regeneration feature	Countries
Fisheries closure	Temporary closure of a fishery (octopus, crab or lobster) to ensure that species reach maturity and that juveniles are not caught	Madagascar, Mauritius, Comoros
Locally managed marine areas/ voluntary marine conservation areas	Local rules to prevent destructive use and designate specific areas that cannot be accessed to protect juvenile species	Madagascar, Mauritius, Seychelles
Marine spatial planning	A process that allows government and natural resource users to determine together the various uses and zoning of national waters	Seychelles

Source: Pierre Failler, "Circular Economy in African and Indian Ocean Island Developing States: Existing Strategies and State of Play" (Indian Ocean Commission, Ebene, 2021)

Challenges in adopting a circular economy

Despite the fact that circular economy-related initiatives and activities are underway in various African island states, challenges remain in achieving a more comprehensive transition to a circular economy. The first challenge is limited knowledge of the circular

economy at different levels of society, including among policymakers, governance actors, businesses and the general public. The circular economy concept is still abstract to many and some may question its relevance, especially for developing island states, given its origins in the Global North. At the level of the general public, apart from a handful of islands such as Mauritius where the concept is being integrated into various policies and initiatives, there is little knowledge about the circular economy. Island populations are, however, increasingly aware of the need for environmental protection and waste management, including the importance of avoiding food waste and single-use plastic products.

Establishing a circular economy framework is challenging when relevant data is scarce

Another important gap linked to circular economy knowledge and capacity is the limited availability of data on the circular economy and related systems, including on natural resource and material flows, and waste management. Establishing a circular economy framework is challenging when relevant data is scarce. Such data is necessary to make a case for the circular economy by estimating specific social, economic and environmental benefits, as well as outlining the costs of existing, extraction-based economic models. While broader monitoring and data management is clearly required, it is also important that these elements are considered in relation to specific circular economy initiatives or pilot projects. Data on implementation and results can support learning and adaptation and the wider adoption of successful practices.

Another challenge for islands in transitioning to a circular economy is the limited availability of relevant technical capacity. Most islands have small populations, which means there are often not enough people with the expertise to develop technically advanced circular economy activities. While some skills might be available for small-scale repair of material and equipment in developing countries, there are limited capacities in terms of refurbishment, remanufacturing, repurposing, energy and material recovery. Achieving appropriate economies of scale for certain waste management and recycling activities is also important to ensure the financial viability of such activities, and this can be a challenge in the context of small island state economies.

Finally, island states can face institutional and political obstacles when transitioning to a circular economy. The decision to transition to a circular economy is highly political and can encounter pushback from those who benefit from current extractive-based and waste-generating models. This can be a political challenge for countries relying on activities such as industrial fishing, for example. Island states often do not have an overarching circular economy framework that provides guidance on the different interventions needed to implement such an economy. Similarly, existing laws and regulations relating to aspects

of the circular economy are not always coordinated to holistically address natural resource and material flows. In addition, there is often inadequate institutional structures and infrastructure to implement circular economic practices in different sectors, including the waste management sector. The latter tends to be project-based, and existing systems and infrastructure, such as those required for recycling, are often understaffed or lacking financial support.

Pathways towards mainstreaming the circular economy in African islands

For the circular economy to drive systemic change in African islands, key actions are necessary at different levels of society.

Action 1: Anchor the circular economy within policy frameworks and regulations

While circular economy innovations and investments can be made at all levels of society and business, these processes are facilitated when the national government is committed to integrating the circular economy into public policy and programmes. The circular economy concept is relevant to a range of policies, but in the context of island states it is particularly important to incorporate this concept into emerging Blue Economy policies and strategies. In terms of policy to be adopted, the 'polluter pays' principle should be integrated into national waste management policies. Policies can shift incentives by ensuring that polluters are responsible for the cost of the waste they generate. Some islands, such as Cabo Verde, have already put such measures in place; these policies can be adopted by other islands in the region. Similarly, the 'Extended Producer Responsibility' – making manufacturers responsible for the treatment or disposal of post-consumer products²⁴ – should be clearly established along the supply chain to prevent extensive pollution.

While policy changes are necessary, there is an equal need to monitor and support effective implementation of these policies

While policy changes are necessary, there is an equal need to monitor and support effective implementation of these policies. Too often, gaps in monitoring and enforcing policies mean that companies have little incentive to comply.

²⁴ Organisation for Economic Co-operation and Development, *Extended Producer Responsibility: A Guidance Manual for Governments* (Paris: OECD, 2001).

Mainstreaming the circular economy in African islands

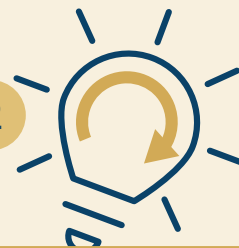
5 Actions to enable the circular economy to drive systemic change in African islands:



1 Anchor the circular economy within policy frameworks and regulations.

Increase awareness of circular economy principles and methods.

2



3 Use waste management as an opportunity to improve use of resources.

Put natural restoration at centre of the economy.

4



5 Incentivise businesses to transition to circular practices.

Action 2: Increase awareness of circular economy principles and methods

To achieve systemic change, more literacy on the circular economy is needed at all levels, especially in key sectors in the Blue Economy of island states. Sectors such as tourism, marine transport, shipping, agriculture, fisheries, services and communication all need to be involved. While some government departments or private companies are becoming more engaged with the circular economy, most actors know little about the opportunities and benefits associated with it. Efforts should also be made to ensure that emerging good practice related to the circular economy is supported in the longer term, and scaled and replicated at both the national and the regional level.

Partnership is also key in building collaboration between large industrial partners and authorities towards a common circular economy vision

Targeted actions should be taken to establish or reinforce existing awareness campaigns and so engage society at large. Partnership is also key in building collaboration between large industrial partners and authorities towards a common circular economy vision. Business chambers and other private sector associations can play an important part in raising awareness of the circular economy within the private sector. Similar actions aimed at the youth, especially at school level, can also generate innovation and uptake of circular economy practices at grassroots level.

Action 3: Use waste management as an opportunity to improve material stock management

Considering the growing amount of waste generated in African islands, the circular economy is a pivotal framework to optimise waste value. This starts with improving waste management processes, for example by optimising existing collection and sorting systems. Supporting and upscaling companies that are undertaking collection and sorting will contribute to better waste management. Improving waste treatment sites is also necessary. Processes such as gas congestion, incineration with energy recovery, waste sorting and cleaning sites and recycling stations can make waste treatment more efficient and more sustainable. Solutions such as implementing high-efficiency recycling and biogas creation should also be tested. Reducing dumping and littering is essential to reduce pollution. Preventing and addressing industrial pollution by key sectors such as tourism, fisheries or agriculture is also needed. To this end, it is important to support existing programmes and agencies monitoring industrial waste management and implementing penalty systems. Existing campaigns on waste management and reduced plastic use need to be supported further and upscaled at national levels.

Action 4: Put natural restoration at the centre of the economy

Various African islands are already involved in managing natural flows, including through initiatives aimed at the sustainable use of resources and/or area-based management. In a circular economy framework, these activities need to be recognised as fundamental to the economy. More enabling policy, technical and financial support should be provided to initiatives and activities that aim to regenerate natural resource flows – too often, such initiatives are underfunded and understaffed. Current solutions that should be reinforced include increasing the protection of exclusive economic zones, ensuring the effectiveness of existing marine protected areas, restoring marine ecosystems and supporting improved governance through area-based management tools. Moreover, considering the high level of biomass extraction through activities such as fisheries, monitoring the state of natural resources (such as fish stocks, forest abundance, wildlife and water pollution) is essential. Another essential step is to improve existing monitoring practices and related capabilities. Decision makers need to be better informed on the use of natural resources as an evidence base for future resource extraction.

Action 5: Incentivise businesses to transition to circular practices

While some businesses and entrepreneurs might be aware of the opportunities the circular economy presents, they often do not get enough support to develop these opportunities. Governments can play an important role in promoting entrepreneurship and scaling of circular economy practices by providing financing and a supportive regulatory environment, while also addressing negative incentives that may be undermining the adoption of such practices. Tax policy adjustments play a key role in incentivising circular economy practices.

Governments can play an important role in promoting entrepreneurship and scaling of circular economy practices by providing financing and a supportive regulatory environment

This might involve setting up or promoting existing tax relief systems such as eco-taxes, tax holidays or breaks for companies adopting circular economy practices, or cutting 'repair and refurbish' value-added tax to encourage reuse businesses. Support for information sharing and collaboration between companies, whether driven by government or by industry bodies, can do much to promote circular economy initiatives. Some countries such as Cabo Verde and Mauritius offer sectoral funds and advisory services to companies, but these services need better promotion among businesses. Such funds are good examples that could be replicated in the other islands.

Conclusion

The circular economy is still an abstract concept in many African countries, including islands. However, it presents crucial opportunities for these islands, especially for countries that want to achieve sustainable and inclusive Blue Economies. Circular economy principles can help African islands develop ocean-based activities that are both regenerative and based on better management of material stocks. These considerations are particularly important as countries consider the development of Blue Economy activities such as seabed mining, marine bioprospecting or offshore oil and gas extraction, which may have long-term negative impacts on natural capital flows.

The circular economy also presents significant opportunities for job creation. While technical capacity in some countries in the region may be limited in certain specialised circular economy activities, there are many opportunities to adopt circular economy practices in the short term that can create jobs. Skills development should be promoted to take advantage of circular economy activities in the medium and long term. By promoting circularity, the problem of waste generation and management – and plastic waste in particular – can be addressed holistically. Finally, the circular economy is also an opportunity for learning exchanges and sharing experiences between islands. Such exchanges should include policy actors and private sector stakeholders. As African island states seek to promote sustainable Blue Economies, circular economy principles can support these efforts by reducing reliance on imports, improving waste management and promoting a strong focus on the regeneration of natural assets.

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