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WCEF2022 MEDIA KIT

Contents

1 The circular economy – an introduction for journalists

So, what is the circular economy? And where does it come from? Isn't Africa already circular? These are questions which many journalists and others often ask. The answers often depend on who replies.

That is because the "circular economy" is an umbrella term which is formed by various existing concepts and Schools of Thought including cradle-to-cradle, biomimicry, industrial symbiosis and others; and there is no standard definition accepted by all: different stakeholders describe the emerging paradigm of a circular economy by using their respective preferences.

Let us therefore reflect and explain what the circular economy is not. For this purpose, we first have a look at the linear economic model.

According to the Circularity Gap Reports by the Dutch non-profit organisation Circle Economy, we live in a world which is roughly ninety percent linear and less than ten percent circular. In other words, over ninety percent of all materials ever extracted and used around the globe are wasted, and less than ten percent of those materials make it back into and are kept in the global economy. To a large extent, the linear economy, paraphrased as the "take-make-use-waste" economy, is at the origin of this situation as it dominates how we run our companies, supply chains and production systems – and does not, or only insufficiently – consider the value of the different kinds of 'waste' embedded in our products.

It is estimated that our global economy already consumes 100 billion tonnes of materials a year, a level of extraction of resources and raw materials which continues to grow due to global consumption and production patterns.

This is where the circular economy comes in; this emerging paradigm addresses these linear challenges and proposes an alternative model. It does so with the intention of maintaining the value of resources and products at the highest possible level, reducing waste and keeping materials in a loop.

The Finnish Innovation Fund Sitra summarises the idea of the circular economy by describing it as "*an economic model that aims to optimise the system as a whole and tackle the root causes of biodiversity loss, climate change and the depletion of natural resources. Rather than producing more and more goods, in a circular economy we get more value from what we have, and we keep that value in the economy for as long as possible through smarter design, digital solutions and a shift from owning products to using services.*"

The African Circular Economy Network (ACEN) provides the following description: *"The circular economy is an alternative to the traditional linear economy (make, use, dispose) in which resources are kept in use for as long as possible, maximum value is extracted from them whilst in use, then materials are recovered and products are reused at the end of their life."*

R strategies or circular economy how-to's

A further way of describing the circular economy is by looking at what companies, consumers and product designers should do to act in a circular manner. This is done by the "how-to's" of a circular economy, also referred to as "R strategies" because they all start with an R: Reduce, Reuse and Recycle might be the three most prominent amongst them while Rethink, Redesign, Repurpose and many other such terms are also part of them. Various organisations have already started using 10 agreed R's – starting with Refuse and ending with Recycle – while researchers have identified well over 35 R words that are used in the literature to describe the circular economy.

This media kit invites you to explore the origins, opportunities and benefits of a circular economy, why it is growing in popularity and what it actually means for people, businesses different industries, governments and others. It was designed to introduce you to the topic and provide a variety of components to inspire you and your reporting on circularity and the transition from a linear to a circular economy.

2 The WCEF2022 in Rwanda

The annual World Circular Economy Forum (WCEF) presents the world's leading circular economy solutions with business leaders, policymakers and experts participating from around the world. Circular economy approaches can help businesses seize new opportunities and gain a competitive advantage, as well as contribute to achieving the United Nations Sustainable Development Goals (SDGs).

WCEF is a global initiative of Finland and the Finnish Innovation Fund Sitra. The first Forum, WCEF2017, identified key elements of a circular economy and showcased solutions and learnings from around the world, bringing together 1,500 people from more than 100 countries. At WCEF2018, more than one thousand circular economy experts discussed creating a true circular economy by 2050. WCEF2019 emphasised the next era of the circular economy and scaling up the transition, with more than 2,200 participants.

As the world adjusted to the impacts of COVID-19, in 2020 WCEFonline presented the circular solutions to rebooting the world's economy and opened its doors to more than 4,200 participants through its new online format. In 2021, there were two big events: WCEF+Climate in the Netherland focused on the crucial role of a circular economy in achieving climate neutrality. The main event WCEF2021 in Toronto, Canada, then focused on seizing circular opportunities, reaching over 26,000 participants from 134 countries with the main Forum's sessions and Accelerator Sessions by partners.

WCEF2022 – From Africa to the World

Hosted in the Global South for the first time, the World Circular Economy Forum 2022 (WCEF2022) will be held from 6-8 December in Kigali, Rwanda and online. African Studios will live-broadcast the main event in five cities across Africa - Cape Town, Yaoundé, Lagos, Lusaka and Kigali - and facilitate national and regional discussions around circularity, while offering participants the opportunity to exhibit their solutions and take tours to local circular economy facilities.

This year's global collaboration Forum presents a unique opportunity for African nations and the world at large to transition toward an inclusive low-carbon and climate resilient economy while tackling key societal challenges. Africa can lead the world towards a new, more resilient economy – the circular economy. With vast natural resources, a young population, strong entrepreneurship and new forms of collaboration, the African continent can offer inspiration to the world.

The Forum will explore major themes relevant to Africa's development in which circularity could play a big role, including climate and nature, youth, infrastructure, entrepreneurship and innovation, as well as trade and value chains. The third day is reserved for partner-led sessions that can take place anywhere around the world or online.

The detailed programme is available at wcef2022.com.

Rwanda and the Circular Economy

Together with Nigeria and South Africa, Rwanda is one of the three founding members of the African Circular Economy Alliance (ACEA) which was launched in 2017. The country has an ambitious vision to be a climate resilient and carbon neutral nation by 2050 and is investing in the circular economy to bring this vision to life.

The ACEA is a government-led coalition of African nations with a mission to spur Africa's transformation to a circular economy that delivers economic growth, jobs, and positive environmental outcomes. It was conceived in 2016 during the World Economic Forum with the mindset of developing Africa's circular economy ecosystem while capitalizing on its development opportunities.

The Alliance serves as a platform that supports the transition to a circular economy at the national, regional, and continental levels.

3 Media activities around WCEF2022

In order to engage the media, Sitra and its partners will

- Host an online press briefing on the eve of the forum, on 5 December at 15:00 (CAT/EET) / 13:00 (GMT). The briefing is limited to representatives of the media and will take place on Microsoft Teams. The speakers of the press briefing include:
  - **Ntobeko Boyana**, Executive and South African Chapter Lead, ACEN
  - **Kari Herlevi**, Head of Global collaboration unit for sustainability solutions, The Finnish Innovation Fund Sitra
  - Representative from the Ministry of Environment, Rwanda

  Media representatives are required to register for the briefing by 2 December 16:00 (CAT/EET) / 14:00 (GMT) at lyyti.fi/reg/WCEF_2022__Online_press_briefing_4231. Registered journalists will be provided with the link to join the Microsoft Teams meeting.
- Manage the press room at the Conference venue in Kigali
- Support journalists in liaising with interview partners
- Share press photos and WCEF2022 logo at Sitra's material bank

3.1 Press Releases

So far, the following official Press Releases and announcements on the WCEF2022 have been issued:

- 28 November 2022: From Africa to the World: Landmark event presents circular economy solutions for green growth, climate and biodiversity
- 30 September 2022: African Studios will bring WCEF2022 to Cameroon, Nigeria, Rwanda, South Africa and Zambia
- 22 June 2022: WCEF2022 invites the world to Africa on 6-8 December 2022 to build circular economy solutions
- 16 February 2022: Rwanda to host the World Circular Economy Forum 2022

3.2 Questions & Answers

What is wrong with the linear economy?

The linear economy is often paraphrased as the take-make-use-waste economic model. Linear consumption and production processes lead to the waste of natural resources. Some of these resources are not renewable and those that are, cannot keep up with the rate of human consumption.

The African Circular Economy Alliance writes:

„The linear model considers the mass production of goods at the expense of growing environmental concerns related to the extraction of non-renewable resources and emissions of greenhouse gases responsible for climate change. Production is mostly resource-intensive generating a large quantity of waste and pollution. For example, Nigeria's oil and gas industry is one of the top 10 greenhouse gas (GHG) emitters in the world, mainly through gas flaring. With the linear model, waste is not valuable hence left to mount on landfills, and we are slowly running out of space to dispose of it. Some African cities such as Johannesburg in South Africa generate 4000 tonnes of waste daily and will run out of landfills in the next four and half years."

What is the circular economy?

The answer to this question depends very much on who you ask. Sitra, the Finnish Innovation Fund, provides the following definition and description:

„Despite the increasing interest in the circular economy, there does not exist a single, widely accepted definition of it. However, there are clear overlaps between conceptions of the main principles, which emphasise a shift from linear use of materials to circular flows by maximising both the value and utility of resources across the value chain. Of the 114 studied circular economy definitions, 38% included aspects of environmental quality in their definition, compared to 46% and 20% for economic prosperity and social equity respectively (Kirchherr et al. 2017). For many, the concept is closely associated with the Ellen MacArthur Foundation's "butterfly diagram", which through different tiers illustrates the continuous flow of both biological and technical materials that underpin the circular economy (Ellen MacArthur Foundation 2022a).

The Finnish Innovation Fund Sitra defines the circular economy as an economic model that aims to optimise the system as a whole and tackle the root causes of biodiversity loss, climate change and depletion of natural resources. Rather than producing more and more goods, in a circular economy we get more value from what we have, and we keep that value in the economy for as long as possible through smarter design, digital solutions and a shift from owning products to using services."

Source: Tackling root causes - Sitra

What are the economic benefits of a circular economy?

According to research from Accenture, the circular economy could generate 4.5 trillion US dollars' worth of additional economic output by 2030. The research identifies circular business models that will help decouple economic growth from natural resource consumption while driving greater competitiveness.
At the same time, many proponents of the circular economy focus on and describe its non-economic benefits such as for protecting the environment and biodiversity, reducing greenhouse gas emissions, increasing resource efficiency, reducing waste or creating jobs. This media kit provides some information and data on these benefits.

What industries and sectors in Africa can benefit the most from a circular economy?

The African Circular Economy Alliance ACEA has assessed market opportunities for the circular economy in Africa, based on four criteria: Circularity potential, Economic significance, Transformative impact potential and Momentum. This approach led to the identification of five industries and sectors that are highly promising. They are referred to as ‚the five big bets for the circular economy in Africa‘:

1. Food systems
2. Packaging
3. The built environment
4. Electronics
5. Fashion and textiles

Across these five thematic areas, the report ‚The five big bets‘ identifies numerous circular economy solutions to creating new loops, as well as slowing and narrowing flows. In each theme, the report prioritises solutions that provide the most significant impact potential on the African continent.

Source: Five Big Bets for the Circular Economy in Africa - ACEA

What can a circular economy contribute to Africa’s food systems and feeding Africa?

Background

Food systems refer to the complex chain of activities, processes and infra-structure involved in feeding people. A food system includes the production of crops and livestock, processing and distribution, consumption and post-consumption. The system interacts with and affects a variety of sectors such as agriculture (core sector), manufacturing, construction (e.g. vertical farms, irrigation facilities), transport and storage, water and waste management, wholesale and retail, and others. The food system is economically significant on the African continent and an anchor for growth.

Food systems are essential to the African continent due to the prominent role of agriculture in the region as well as the growing challenges of feeding a growing population with increasingly scarce resources. Agriculture contributes roughly 23% of the continent’s total GDP and employs close to 60% of the active population, playing a vital part in economic activity.

Circular economy solutions in food systems can help the continent feed its growing population while driving green growth and employment. ... A more circular food system requires a more efficient use of resources such as energy and water, an increase in productivity, a reduction in post-harvest losses through better storage and transportation, more efficient agro-processing, a reduction in consumer waste and an improvement in waste management. Solutions for improved waste management, particularly for waste-to-compost/soil enhancers conversion, offer an immediate opportunity for increased circularity in the system.

Opportunities

There are numerous opportunities in food systems that can help address existing challenges. Specifically:

- *In production, opportunities include the use of climate-smart agriculture (CSA) and improved access and use of equipment, particularly storage equipment (using sharing models)*
- *In processing and distribution, the opportunities are focused on green manufacturing and shared logistics services, respectively*
- *Consumption opportunities exist for embracing improved cuisines and in food diversion driven by the hospitality sector*
- *In post-consumption, there are numerous opportunities for waste conversion, particularly in waste-to-energy and waste-to soil enhancers / fertilisers*

Source: Five Big Bets for the Circular Economy in Africa - ACEA

Why should, and how can, Africa's packaging industry become more circular?

Background

Demand for packaging in Africa is growing, driven by growth in local industries (particularly agro-processing). Packaging acts as an enabler for multiple industries, particularly for producers of nondurable household goods such as packaged foods, beverages, toiletries, confectionery, cosmetics, over-the-counter drugs, dry goods and other consumables. Packaging includes materials such as paper and board, aluminium/metal, glass, and rigid and flexible plastic.

Plastic packaging is the most popular type of packaging for the consumer goods industry due to cost and ease of use. In 2015, plastic packaging as a share of global packaging volumes increased from 17% to 25%. During the past half-century, overall plastics production has surged from 15 million metric tonnes to more than 350 million metric tonnes. Its use is expected to double over the next 20 years.

Unfortunately, most plastic packaging is used only once and 95% of its value, estimated at $80 billion to $120 billion annually globally, is lost to the economy after its initial use. The recent global outcry against plastic pollution has led to the increasing regulation of single-use plastic across countries, creating a market for environmentally sustainable packaging. Sixteen countries in Africa have banned the use of single-use plastics and are introducing measures to enforce the ban.

The effects of plastic accumulation have implications for different sectors such as tourism, agriculture and livestock. For example, plastic causes visual pollution (litter) that affects such sectors as tourism; it also blocks drains, creating serious flooding or stormwater problems (and breeding areas for disease vectors such as mosquitoes). Furthermore, plastic waste that finds its way into the sea and other bodies of water can be fatal for aquatic wildlife when mistakenly ingested, and there are also cases of its ingestion causing livestock deaths.

Polyethylene terephthalate (PET) is the largest driver of plastic waste due to its cheap price acting as a disincentive for increased reuse. PET recycling is thus a critical solution when it comes to managing large amounts of plastic waste. There are opportunities for design innovation and the reuse of other types of plastic. Increasing the CE in plastic packaging can be a driver for green jobs, support improved livelihoods and help in minimising pollution.

Opportunities

Working to alleviate plastic packaging pollution through the following approaches can help create new economic opportunities while removing threats from the aforementioned sectors:

1. *Increase recycling and innovation in PET collection methods as a way of creating loops*
2. *Incentivise investments in PET recycling facilities through regional harmonisation of legislation and the introduction of tax incentives*
3. *Explore longer-term opportunities in design innovation and reuse of other types of plastic packaging*

Source: Five Big Bets for the Circular Economy in Africa - ACEA

What solutions exist for Africa's packaging challenges, other than recycling?

Much of the literature on the packaging industry in Africa focusses on recycling as a solution while population growth and consumption patterns will lead to more packaging waste in the coming decades. More and better recycling may therefore be insufficient and only address parts of the problem. The circular economy concept also provides alternative solutions such as Redesigning and Reducing the packaging to generate less waste; biodegradable packaging solutions, for example, can be an alternative solution. Furthermore, Deposit Return Schemes (DRS) can keep containers incl. plastic bottles in a loop and can help reduce the production of plastics and other packaging. While these systemic solutions are less present in the literature, amd the media, than recycling, they provide for challenging investigations by journalists, also referred to in the ‚Story Ideas' section of this media kit.

How can the circular economy help address Africa's rapid urbanisation and built environment?

Background

The built environment refers to all man-made structures that support human activities. This includes buildings (residential, commercial, institutional, etc.), infrastructure networks (transport, water, waste management, electricity, etc.) and open spaces (parks, community gardens, etc.).

As the urban population increases, so does the expansion of the built environment, resource consumption and pollution. Africa's urban population is expected to nearly

triple by 2050, reaching 1.34 billion people, increasing the demand for buildings and building materials such as cement, iron and steel. The manufacturing of these materials contributes to 11% of total CO_2 emissions from construction. Emissions are bound to increase by 2050, as the cement and concrete market grow by 12–23%, while the global steel market will grow by 15–40%. Moreover, buildings in the existing built environment are rarely refurbished, recycled or remodelled and produce significant emissions during operation and demolishment. This growing demand and limited recycling could increase pollution in the next decade if sustainable construction is not introduced.

Unlike the informal built environment, the formal built environment is regulated, planned and capital-intensive. The formal built environment has access to most infrastructure networks and promotes the health of its occupants. In Africa, a few large corporate companies thrive in this space. However, only 30% of households in Africa can afford to live in a formal built environment.

Opportunities

Africa's built environment can be sustainable and create economic opportunities by exploring opportunities that use these four CE principles or actions:

1. *Make design the core of a sustainable built environment*
2. *Use environmentally friendly construction materials*
3. *Promote the construction of green buildings to increase their sustainability*
4. *Use regenerative approaches to manage household rubbish and wastewater*

The ‚Five Big Bets' by the ACEA provide case studies and concrete recommendations for each of the four opportunities mentioned above.

Source: Five Big Bets for the Circular Economy in Africa - ACEA

What opportunities does the circular economy offer for Africa's increasing electronic waste?

Background

Electronic waste, e-waste in brief, is the waste generated by electrical and electronic equipment (EEE) which includes a wide range of products with electrical circuitry or components requiring mains or battery power. Globally, e-waste is a growing challenge, matching the growth of the information and communication technology industry. Since 2014, the global generation of e-waste has grown by 9.2 million metric tonnes (21%).

Proper disposal of e-waste requires training and investment in recycling and management technology as improper processing can have severe health effects. This waste is often burned, releasing heavy metals and toxic chemicals into the air, soil and water. In Africa, the potential release of harmful substances from undocumented

disposal is estimated at 9.4 megatonnes of CO_2 GHG emissions, 0.01 kilotonnes of mercury and 5.6 kilotonnes of brominated flame retardants (BFR).

Illegal imports of second-hand electronics are a driver of e-waste in Africa in addition to growing domestic waste generation. While the Basel Convention forbids developed countries from carrying out the unauthorized dumping of e-waste in developing countries, enforcement challenges have led to a lucrative illicit trade.

Growing technology adoption is also increasing the domestic generation of e-waste, with Nigeria producing 290,000 metric tonnes of e-waste in 2017. As such, addressing e-waste growth in Africa would require a dual approach focused on both stopping illegal imports and creating systems to deal with domestic generation.

Opportunities

There is an opportunity to convert an e-waste challenge into an economic opportunity using a three-step approach:

1. Create and enforce legislation focused on limiting the amount of foreign e-waste
2. Achieve a zero e-waste circular economy through Extended Producer Responsibility (EPR) principles
3. Establish proper recycling and collection facilities for current and domestic e-waste that incorporate both formal and informal operators

Source: Five Big Bets for the Circular Economy in Africa - ACEA

What solutions does the circular economy provide for Africa's Fashion and textiles industries?

Background

The fashion and textile industry makes a significant contribution to the global economy and everyday life. Fashion and textiles is a US$1.3 trillion market, employing more than 300 million people globally along the value chain. In Africa, textile / fashion combined with the footwear market is estimated to be worth US$31 billion, employing mostly women and young people; almost 80% of the workers employed in Ethiopia's apparel sector are women.

The African Development Bank (AfDB) states that textile/fashion can create millions of jobs for African women and young people as the industry is labour-intensive. Using a circular economy approach in the existing fashion/textile industry could create new initiatives that recycle and upscale materials, generating additional job creation avenues. New jobs would be derived from recent developments in logistics, more significant innovation in research and development, entrepreneurship activities, the creation of new medium and small companies willing to adopt this circular business model or a new economy based on services.

The impact of fast fashion has led to a large influx of second-hand clothing (SHC) in Africa. As a result, an increasing amount of unsold SHC ends up in landfills and water

bodies in Africa because most countries have no formal collection and recycling facilities. In Kantamanto, Ghana, one of the largest second hand markets in Africa, 50 metric tonnes of unsold clothes are discarded a day, equivalent to 40% of all imported second-hand clothing.

Opportunities

The African textile industry has an opportunity to pursue a three-pronged strategy focused on circularity:

1. Develop recycling industries that convert fashion and textiles waste into garments for commercial export markets
2. Spearhead the transformation of conventional textile industries to green industries that use safe and renewable inputs for textile manufacturing
3. Recycle textile cotton waste and cloths into yarns that can be upscaled into cloth to reduce the use of virgin resources

Source: Five Big Bets for the Circular Economy in Africa - ACEA

How can the Circular Economy create jobs in Africa?

The circular economy can create jobs in many various ways; here is some background and some examples:

- *In Africa, most jobs related to sustainable material use, such as collection and recycling, are taken care of by the informal sector. As in most low and lower middle-income countries, women are more exposed to informal employment and hence more often found in vulnerable situations. The circular transition can create new green and safe jobs that are likely to be better paid and more stable, but they also require more education and skills than the informal sector can offer. Thus, investment in circular businesses enables an inclusive development approach that creates opportunities for marginalised people such as the youth and women.*

  Source: Enabling access to finance will unlock Africa's circular economy - Sitra

- *Sustainable forest management has an opportunity to create green jobs in Africa. Globally, forest conservation has the potential to create a total of ~16 million jobs. With Africa's share of the world's forest standing at 17%, forest management could generate about 3 million jobs across the continent.*

  Recycling of e-waste has created employment opportunities, although these are mostly limited to men. Through dismantling and refurbishing electronic equipment, workers can pick up skills in the repair and reuse of items that they later sell to the community. The recycling and dismantling facility in Rwanda has been able to create 300 green jobs, while the collection centres have created more than 1,000 jobs.

Solutions for improved waste management, particularly for waste-to-compost/soil enhancers conversion, offer an immediate opportunity for increased circularity in the system. By 2030, we can help create a trillion-dollar industry while driving millions of inclusive green jobs through a circular food system.

Source: Five Big Bets for the Circular Economy in Africa - ACEA

Please also check the Facts & Figures section on this topic.

What is the role of recycling in a circular economy?

Recycling is often referred to as ‚the last resort' in a circular economy. This is because recycling is an activity at the very end of a product's life cycle, the so-called ‚end-of-life'. In most recycling processes, products and materials loose some of their value and are therefore referred to as ‚downcycling'. ‚Upcycling', on the other hand, is when value is added to a product, and e.g. exists in the fashion and textile industries.

One can therefore state that recycling is part of a circular economy while it usually results in the loss of value and should be avoided. Other Value Retention Options such as Redesigning or entirely Reimagining products so that they can be repaired or repurposed in a way that recycling does not become necessary are preferable.

What is the role of the circular economy in achieving the Sustainable Development Goals SDGs?

The UK-based think-tank The Chatham House writes:

„The circular economy, a model for eliminating waste and maximizing the value of resources, has the potential to contribute to achieving the Sustainable Development Goals (SDGs) ... The circular economy is a holistic approach which cuts across a range of sectors including agriculture, energy, climate change, water and sanitation. Indeed, utilizing circular economy practices across these areas, combined with social justice considerations, provides a unique framework for achieving the SDGs.

Circular economy practices such as reduce, redesign, reuse, repair, remanufacturing and recycling are directly aligned with achieving SDG 12 (Sustainable Production and Consumption) by employing new technologies and business models, reducing the amount of unsustainable products that is produced and bought, sharing and repairing, designing out waste and safely managing toxic substances. As a result, resource efficiency can be improved and pressure reduced on the natural environment. ...“

Source: How the Circular Economy Can Help Realize the Sustainable Development Goals

How can a circular economy help reduce Greenhouse Gas Emissions?

A recent paper launched at COP27, “Circular Economy as a Climate Strategy”, outlines nine calls-to-action that decision makers and researchers must heed to maximize the potential of the circular economy to help limit warming to 1.5 degrees Celsius and avoid the worst impacts of climate breakdown:

1. Shift consumption patterns
2. Stimulate product circularity from the design phase
3. Incorporate circularity across clean energy value chains
4. Integrate circular economy strategies into national climate policies and plans
5. Incentivize cross-border greenhouse gas emission reduction
6. Connect circular economy metrics with climate change impacts
7. Increase transparency and comparability in modelling methodologies
8. Apply systemic and context-specific impact assessment to inform decision-making
9. Investigate the role of the circular economy in climate change adaptation.

Sources:
Platform for Accelerating the Circular Economy (pacecircular.org)
9 ways the circular economy can help avert the climate crisis

How can a circular economy help protect biodiversity?

Background

Biodiversity refers to the diversity and abundance of life on Earth. The Convention on Biological Diversity (CBD) defines biodiversity as: “the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems” (CBD 2006).

The terms “biodiversity” and “nature” are often used interchangeably, although they differ in that biodiversity refers to a characteristic of life, its diversity, rather than to the life itself, which can be called nature or wildlife.

Global biodiversity is in decline and is projected to continue to decline in the absence of efforts to reduce pressures from human activities.Species extinction is currently estimated to be occurring at up to 1,000 times the “natural” background rate (Pimm et al. 1996).

Possible approach and solutions

The circular economy redefines how we produce, consume and manage materials and products. It gives us more value from what we have and leaves room for nature. A transition to a circular economy offers a wide range of environmental benefits and

economic opportunities for governments, business and consumers. However, no prior work has quantitatively modelled
the potential impact a transition to a circular economy could have on halting global biodiversity loss. This work sets out to fill this crucial gap.

The study "Tackling Root Causes" *by Sitra emphasises how the circular economy can halt and partly reverse biodiversity loss by 2035, through policy- and business-led interventions in the food and agriculture, buildings and construction, fibres and textiles, and forest (i.e., forestry and the forest industry) sectors. These interventions are focused on regenerative production principles, as well as on business models that extend product lifetimes, increase use rates and cut waste to reduce our extraction of resources and in turn tackle the key drivers of biodiversity loss: land-use change, climate change, pollution, direct exploitation and invasive alien species. "*

The section Facts & Figures presents more concrete data and figures on the circular economy and biodiversity.

Source: Tackling Root Causes – Halting biodiversity loss through the circular economy - Sitra

What makes a company ‚circular' and what kind of circular business models exist?

A company can achieve circular economy business benefits and address identified inefficiencies by adopting one or more circular economy business models.

The Finnish Innovation Fund Sitra identifies five circular economy business models:

1. **Circular inputs:** Using recycled, bio-based materials and renewable energy in production. Creating sustainable, repairable and recyclable products.

2. **Sharing platforms**: Digital platforms make it possible to increase the utilisation rates of goods and resources through, for example, renting, sharing and sharing.

3. **Product as a service**: Offering clients access to products instead of owning products, through services such as leasing and renting.

4. **Product life extension**: Making products last longer such as through repair, maintenance, upgrade, and resale services.

5. **Resource recovery**: Recovering materials and resources from products that are no longer functional in their current application.

Sitra has compiled a list of the most interesting companies in Finland applying circular economy business models: Most interesting companies in the circular economy in Finland 2.1 - Sitra

What is (eco-economic) decoupling, and what does it have to do with a circular economy?

In economic and environmental fields, decoupling refers to the idea of an economy that would be able to grow without corresponding increases in environmental pressure. In many economies, increasing production (measured by GDP) currently raises pressure on the environment. An economy that would be able to sustain economic growth while reducing the amount of resources such as water or fossil fuels used and delink environmental deterioration at the same time would be said to be decoupled.

When it comes to the circular economy, two groups of proponents can be distinguished: those who believe that economic growth can be decoupled from environmental pressure, and those who believe that economic growth cannot be decoupled from environmental pressure. Both groups may be advocates for a circular economy, while they advance different preferences and objectives.

What is Sitra, the Finnish Innovation Fund?

Sitra is a future fund that collaborates with partners from different sectors to research, trial and implement bold new ideas that shape the future. It is a nationally and internationally influential think-do-and-connect tank, a promoter of experimentation and new operating models, and a facilitator of collaboration.

Sitra's aim is a Finland that succeeds as a pioneer in sustainable well-being. The organisation was named the number one public-sector circular economy accelerator in the world by the World Economic Forum (WEF) when Sitra won the public-sector category of the Circulars Awards 2018 for its pioneering work to accelerate the world's transition to a circular economy.

More: Facts about Sitra

4 Facts & Figures

4.1 The Circular Economy, youth and job creation

Please note: Estimates about the impacts of a circular economy on employment depend on the kind of definition applied to the circular economy, as seen by the following differing evaluations. Please also check the Questions & Answers section on this topic.

- Africa is the only region in the world where the share of youth (up to 24 years old) is increasing and expected to rise to 51% of the total population by 2050.

  As a result, a young and fast-growing middle class will inevitably want a higher standard of living, leading to increased consumption. However, there are positive signs of economies attempting to accommodate this growth through more circular activities, with some of the most ambitious circular economy related policymaking occurring in middle- and lower income African countries.

For example, Rwanda and Kenya have imposed total bans on plastic bags to stem growing waste crises. Furthermore, through capturing the value of materials previously lost to the economy, the circular economy is expected to drive job creation and economic growth. For example, an e-waste recycling facility opened in 2017 in Rwanda created 400 green jobs, while a similar facility in Kenya established in 2013 created 2,000 green jobs in its first four years of operation.

Source: Five Big Bets for the Circular Economy in Africa

- According to the International Labour Organization (ILO), changes in energy production – including the generation of renewable energy, greater efficiency, adoption of electric vehicles and increasing efficiency in buildings – can create a net gain of 18 million jobs throughout the world economy.

  Of 163 economic sectors analysed by the ILO, 14 show employment losses of more than 10,000 jobs worldwide, and only two (petroleum refining and the extraction of crude petroleum) show losses of one million jobs or more.

  According to the Club of Rome, a full adoption of a circular economy would create more than 75,000 jobs in Finland, 100,000 in Sweden, 200,000 in the Netherlands, 400,000 in Spain and 500,000 in France by 2030.

  The Global Climate Action Summit estimates the creation of over 65 million new low-carbon jobs by 2030.

  Sources:
  - IISD report: Effects of the Circular Economy on Jobs
  - Sitra article: What do we know about the effects of a circular economy on jobs?

4.2 Financing the circular economy

- In July 2018, several Dutch banks and other stakeholders came together to develop the first ‚Circular Economy Finance Guidelines' as „voluntary process guidelines that recommend transparency and disclosure and promote integrity in the debt and equity market for the circular economy." They suggest the following definition for circular economy finance: „Circular Economy Finance is any type of instrument where the investments will be exclusively applied to finance or re-finance, in part or in full, new and/or existing eligible companies or projects in the circular economy."

  Source: ABN AMRO, ING and Rabobank launch finance guidelines for circular economy

- A broad number of banks, financial institutions, consultancy companies and others continue to develop analyses, reports and studies about the challenges and opportunities of financing the circular economy. The UNEP Finance Initiative published ‚Financing Circularity: Demistifying Finance for Circular Economies' in October 2020, stating:

"Redesigning economies to embed circularity can change the way we produce and consume, addressing issues ranging from greenhouse gas emissions to plastics, resource scarcity, waste management, and use of hazardous chemicals, while increasing resilience. This report offers emerging evidence of the potential to scale up finance to accelerate the shift away from a take-make-waste model of resource use and pollution to a circular economy, and practical steps to embed circularity into financing. The insights in this report can guide financial institutions to address the opportunities and threats offered by the transition, providing recommendations for policymakers for frameworks to accelerate financing for a circular economy, with examples of measures that have proven effective around the world."

- There is broad agreement that current investment into companies with circular business models is extremely low; several organisations explore why this is the case and how it can be overcome. The authors of Enabling access to finance will unlock Africa's circular economy write: "… Access to finance remains a barrier, especially for small businesses in the circular economy and for businesses in general, in part due to high interest rates. Due to collateral requirements and cultural reasons, this barrier tends to be even higher for women- and youth-owned enterprises. ..."

4.3 Electronic waste in a circular economy

For background, please see "Frequently Asked Questions".

- In Ghana, more than 150,000 second-hand electronics are imported each year. Nigeria receives more than 60,000 metric tonnes of used electronics and electrical equipment from other countries through Lagos ports. More than 25% of this e-waste is classified as "dead on arrival" (not operational).

- Growing technology adoption is also increasing the domestic generation of e-waste, with Nigeria producing 290,000 metric tonnes of e-waste in 2017.

- Globally, only 40% of countries are covered by an e-waste policy, legislation or regulation. In Africa, 10 countries have a national e-waste legislation / policy.

- Ghana and Nigeria are two of the countries that are also working to enforce these regulations. In Ghana, technical guidelines on environmentally sound e-waste management for collectors, collection centers, transporters, treatment facilities and final disposal have been developed and are being enforced.

Source: Five Big Bets for the Circular Economy in Africa

4.4 Circular economy policies

Finland was the first country in the world to create a national road map to a circular economy. The road map, published in 2016 and subsequently updated in 2019, outlines the circular economy measures to which Finnish state administration, municipalities and businesses have already committed themselves.

Since then, many countries and regions all over the globe have created their own road maps and started implementing them. An up-to-date overview of circular policies in different countries can be found on Chatham House website: Policies | circulareconomy.earth | Chatham House

Sitra has compiled a guide based on what has been learned from Finland's circular economy road map process. The guide features tools, guidelines and inspiration for countries that want to move towards or are already taking their first steps towards a circular economy.

4.5 The circular economy and climate change

- According to the Ellen MacArthur Foundation, energy efficiency and switching to renewable energy is only half the story of mitigating climate change. By adopting a circular economy approach in the products, services and systems we design, we can also start to tackle the remaining 45% of emissions associated with industry, agriculture, and land use that the energy transition can't address.

- According to the Material Economics study 'Re-configure: The Circular Economy – a Powerful Force for Climate Mitigation' commissioned by Sitra, switching to the circular use of the four largest materials in terms of emissions – steel, plastics, aluminium, and cement – is indispensable to cutting global greenhouse gas emissions and achieving the Paris Agreement. A more circular economy could cut EU industrial emissions by more than half by 2050.

- The study explores a broad range of opportunities for steel, plastics, aluminium, and cement and two large use segments for these materials (passenger cars and buildings). The measures identified could reduce EU industrial emissions by 56% (300 Mt) annually by 2050, more than half of what is necessary to achieve net zero emissions. Globally, the reductions could be 3.6 billion tons per year in the same period.

Source: 'Re-configure: The Circular Economy – a Powerful Force for Climate Mitigation'

4.6 The circular economy and biodiversity

- Circular economy interventions in four key sectors can halt global biodiversity loss and help the world's biodiversity recover to the same levels as in the year 2000 by 2035, according to a study by Sitra: circular interventions in the food and agriculture, construction, textiles and forest sectors can halt biodiversity loss even if no other action is taken.

- The study finds that the world's biodiversity can recover to 2000 levels by 2035, if the circular interventions are implemented. (Source: https://www.sitra.fi/en/news/circular-solutions-can-halt-biodiversity-loss-the-food-and-agriculture-sector-can-make-the-largest-contribution/)

- According to the study, the sector where circular interventions can have the largest positive impact is food and agriculture. Merely by shifting to more alternative proteins and regenerative agriculture, and by reducing food waste by half, biodiversity loss could be halted by 2035.

- In practice, the transition to a circular economy in the food and agriculture sector will make it possible to produce the food humanity consumes on a much smaller area of agricultural land and with fewer inputs such as fertilisers, leaving more room for nature to thrive. According to the study, which captures the impacts on biodiversity from changes in land use, the circular interventions examined could for example free up agricultural land corresponding to as much as 1.5 times the size of the European Union for other uses by 2050.

- According to the study, many circular interventions that tackle biodiversity loss also reduce greenhouse gas emissions, not least those solutions that give us more value from our biomass, including substituting alternative proteins for meat and reducing food waste – these are the two solutions in the study with the most impact and are also practices that people can easily adopt. In the food and agriculture sector, the transition to a circular economy would reduce methane emissions from agriculture by as much as 90 per cent by 2050.

Source: Tackling Root Causes – Halting biodiversity loss through the circular economy

4.7 The circular economy and waste

The world generates 49 Mt of electronic waste worth USD 63 billion, per year; only 20% is collected and recycled under appropriate conditions. (Source: https://ellenmacarthurfoundation.org/topics/cities/overview)

Surprising facts about the circular economy

- Today, our economies are using about 1.6 earths; this means that we're using about 60% more of the earth's resources than it can regenerate every year. By 2050, with an increased global population and a resulting rise in consumption, that "overshoot" could get to 3-4 earths, which is clearly unsustainable.

- Today, the world produces over 2 billion tonnes of solid waste, and that's expected to grow to 3.4 billion tonnes by 2050. About one-third of that waste is not managed properly. By volume, global waste includes 44% food and organics, 17% paper and 12% plastic – all valuable commodities.

- We're throwing away over 50 million tonnes of electronic and electric goods, worth over $62 billion, every year, including rare earth minerals, gold and copper.

- Why are landfills especially insidious? In addition to taking up otherwise productive land, this explanation from Waste Dive is especially helpful: "When trash is packed into a pile, the oxygen-free environment supports bacteria that thrive in those conditions. As the microbes degrade the waste, they release carbon dioxide and methane. The latter is… 84 times more potent of a global warming agent than carbon dioxide in the first 20 years of its release."

- Many of us waste food every day. 22% of global emissions and 30% of energy consumption come from the food sector. At the same time, nearly one-third of all food produced is wasted, and food waste continues to be the top product found in landfills.

- Humanity throws away 148 million tonnes of clothing each year by 2030. $500 billion in value is at stake by adopting circular fashion solutions, keeping valuable materials out of landfills and reducing our reliance on virgin commodities.

Source: the World Economic Forum (WEF)

5 Recommended readings

This section provides links to already published articles and relevant studies by Sitra and partners for inspiration and further investigations:

Studies by Sitra

- Tackling root causes – Halting biodiversity loss through the circular economy (Sitra 2022)
- Inspiring circular economy solutions from around the globe (Sitra 2021)
- Guide: How to create a national circular economy road map (Sitra 2020)
- Tools to go circular: the Nordic circular economy playbook and toolkit (Nordic Innovation, Sitra and Accenture 2020)
- The circular economy – a powerful force for climate mitigation (Material Economics, Sitra et al. 2018)
- Catalyse action: Lifestyle test and Shift 1.5 Method book (Sitra 2021)

Studies by Footprints Africa

- The Circular Economy: Our Journey in Africa So Far
- Roots of the Future: the business regenerating Africa's soils
- Building Africa's first circular business measurement framework

Studies by the African Circular Economy Alliance (ACEA)

- Five Big Bets for the Circular Economy in Africa

Studies by Circle Economy

The Amsterdam-based non-profit organisation has developed the concept of the 'Circularity Gap' and produces, amongst others, a series of Circularity Gap Reports on various countries (e.g. Austria, Netherlands, Norway) as well as global reports at the Circularity Gap Reporting Initiative; the concept is explained and the gap between the linear and the circular economy is presented.

Articles by Sitra

The circular economy is relevant for Africa's development, and the continent's path is vital for the global transition towards circularity. This section provides links to already published articles by Sitra and others and addressing topics that will be discussed further at the WCEF 2022 in Kigali, Rwanda.

- Africa's circular economy needs support from policymakers (Sitra)
- Enabling access to finance will unlock Africa's circular economy (Sitra)
- The African circular economy is driven by youth and innovative businesses (Sitra)
- The circular economy can halt biodiversity loss in Africa (Sitra)
- The African opportunity – interview with the Minister of Environment of Rwanda (Sitra) (to be published on 29 November)
- 9 ways the circular economy can help avert the climate crisis (PACE)

6 Circular economy story ideas

The circular economy is a paradigm or a concept that is applicable to many different industries and sectors. This section provides journalists with some food for thought on circular economy related topics and a series of questions that journalists could ask for their investigations.

a) How is my country's waste being managed, what are the consequences and how can this be improved?

b) What kind of waste is being imported into my country – and what does really happen with it?

c) What companies in my country are already using certain kinds of waste for their business?

d) Feeding Africa: how can the circular economy help, and who is already doing it?

e) Who is driving the circular economy in Africa? An investigation into Africa's Circular Economy organisations (e.g. ACEA, ACEN, Footprints Africa and others)

f) If Recycling does not do the trick: how can we avoid so much waste in the first place?

g) Why is there so much plastic today, and how did we live without it just some decades ago? Can recycling be the solution?

h) Africa's construction industry is booming and may soon run out of resources – how the circular economy can help

i) Bottles and containers can be easily used over and over again – just why are there barely any Deposit Return Schemes in Africa?

j) The waste hierarchy and how industries can feed each other with their waste

k) How does our economy destroy our biodiversity? An investigation into ...

l) The Sustainable Development Goals are still around – what the circular economy can do to help achieve them

m) Towards resilience: How the circular economy can help innovate your business

n) Waste management, Recycling, Circular economy: what are the differences?

o) Designing out waste: how product design can reduce the generation of waste before it even exists

7 Circular businesses: Inspiring solutions from Africa

In order to showcase circular economy solutions from Africa, Sitra has gathered some of the most exciting circular solutions from a list of more than 500 companies compiled by Footprints Africa, a non-profit organisation supporting the sustainable development of small- and medium-sized enterprises. The following list represents a diverse group of companies with five different circular economy business models:

1. **Product as a service**: these so-called PaaS models provide consumers or users with services instead of products.
2. **Renewability:** these businesses use renewable and recyclable materials as well as renewable energy in product design and manufacturing.
3. **Sharing platforms:** these companies maximise the use of goods and resources and extend their life cycles by using digital platforms for renting, selling, sharing and reuse, for instance.
4. **Product-life extension**: when companies use products according to their original purpose for as long as possible or enable multiple instances of reuse through means such as maintenance, repair and refurbishment.
5. **Resource efficiency and recycling**: material and energy-efficient solutions, and the collection and reuse of products and raw materials that have reached the end of their life cycle.

Although many of these solutions are local in focus, they can inspire entrepreneurs, governments and consumers all over the world in their own circular transition.

1. South Africa: Growth and sustainability go hand-in-hand with textile recycling
2. Uganda: An easier method to make drinking water safe with Vepox Filter
3. Kenya: A new life for old computers in the WEEE Centre
4. Ghana: Giving dirt a new lease on life
5. Egypt: Matching food buyers, sellers and donators
6. Kenya: A circular economy on the village scale
7. Ghana: Regenerative agriculture with a dash of blockchain
8. Ghana: Neat Eco-Feeds
9. South Africa: A circular economy of food
10. Nigeria: Communal refrigerated buildings powered by the sun
11. South Africa: Bringing efficiency to one of the most wasteful industries
12. Tanzania: Building structures out of used plastic
13. Finland's 41 most interesting companies in the circular economy – Check out Finnish businesses which provide *Smart solar power systems as a service, Worry-free lubrication for machines, Recycled nutrients and soil improvers for agriculture and more*

14. Rwanda, Uganda: Finnish company Block Solutions constructs modular building solutions from blocks that are made of recycled plastics and wood fibre (a by-product of the forest industry).
15. Côte d'Ivoire: LONO transforms agricultural waste and by-products into compost, animal feed and biofuels, using community-scale, clean technologies they have developed themselves.

8 Circular Economy experts for your interviews

- **Kari Herlevi** (kari.herlevi@sitra.fi) **,** Head of Global collaboration unit for sustainability solutions, Finnish Innovation Fund Sitra. A multi-skilled circular economy and sustainability expert, who has been a key player in Finland's journey to a circular economy. Kari is also a member of many international circular economy networks and institutions.
- **Mika Sulkinoja** (mika.sulkinoja@sitra.fi)**,** Senior Specialist, the Circular Economy, Finnish Innovation Fund Sitra. Mika has been leading the planning and organizing of the World Circular Economy Forum and Sitra's other international work for many years. He has a solid understanding of circular economy trends and developments.
- **Tim Forslund** (tim.forslund@sitra.fi)**,** Specialist, Sustainability Solutions, Finnish Innovation Fund Sitra. Tim is a visionary circular economy specialist we has lately focused on the potential of a circular economy to halt biodiversity loss.
- **Taina Nikula** (taina.nikula@gov.fi), Senior counsellor, Ministry of the Environment, Finland. Taina has vast experience in creating and implementing national circular economy road maps, strategies and other policy measures in Finland.
- **Malena Sell-Myllyoja** (malena.sell@formin.fi), Specialist, Ministry for Foreign Affairs, Finland. She is a leading specialist in circular trade and foreign policies including the international trade regime.
- **Bezawit Eshetu** (bezawit.eshetu21@gmail.com), Executive team member, Ethopia Country Representative, African Circular Economy Network
- **Jocelyne Landry Tsonang** (joycetsonang7@gmail.com), Executive team member, Cameroon Country Representative, African Circular Economy Network
- **Ntobeko Boyana** (ntobeko@benpeta.co.za) Executive team member, South Africa Chapter Lead, African Circular Economy Network

9 The WCEF2022 and the Circular Economy in pictures

- The WCEF2022 logo and press photos are available at Sitra's material bank.
- Selection of other circular economy images from UNEP for journalists to use free of charge can be downloaded here: https://unenvironment.widencollective.com/c/vgcubnsh

10 Media contacts

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