Environment and Society Programme

A global roadmap for an inclusive circular economy

For Stockholm+50

Patrick Schröder and Jack Barrie

May 2022

Independent thinking since 1920

10 St James's Square, London SW1Y 4LE T +44 (0)20 7957 5700
contact@chathamhouse.org www.chathamhouse.org
Charity Registration Number: 208223

CHATHAM HOUSE

Introduction

The circular economy offers systemic solutions to the triple planetary crisis of climate change, biodiversity destruction and pollution, as well as pathways for inclusive development. It can strongly contribute to achieving the goals of a healthy planet and prosperity for all. Stockholm+50 is a major environmental event, taking place on 2–3 June 2022, and follows on from the original UN Conference on the Human Environment that took place in 1972. This conference offers a significant opportunity to elevate circular economy ideas and solutions on the global environmental agenda, where they have yet to gain traction.

In the run-up to Stockholm+50, Chatham House's Environment and Society Programme convened a series of international online workshops and stakeholder dialogues.[1] These identified key areas for global cooperation on the circular economy. Participants included representatives of UN member states, multilateral institutions, and representatives of Major Groups including non-governmental organizations, women, business and industry, workers and trade unions, and the scientific and technological community. Via consultations and co-design workshops, stakeholders provided inputs and advice on how the circular economy can advance global development and environmental goals, and on how it can gain a stronger foothold in the multilateral system. Many participants highlighted a global roadmap for an inclusive circular economy as a way of addressing these issues after Stockholm+50.

This paper outlines how such a roadmap process could take shape, building and expanding on the diverse stakeholder views included in Chatham House's preparations for Stockholm+50.

Meeting global needs via the circular economy

The global transition to a circular economy is not an end in itself, rather a means to tackle some of the leading root causes of climate change, biodiversity loss and pollution. By rethinking how we produce, consume and manage materials, and by redesigning systems of production and consumption, we can reduce pressures on critical ecosystems. Furthermore, by focusing not just on materials and environmental issues, but equally on human needs and sustainable livelihoods, decent work and social justice, the circular economy transition can make important contributions to human development, to reducing poverty and to improving people's well-being around the world.

Supporting climate mitigation

Approximately 45 per cent of global greenhouse gas emissions cannot be tackled with renewable energy alone – these emissions reductions require a shift in the

1 Chatham House developed an initial concept note outlining five potential opportunities for global cooperation on the circular economy. The purpose of the workshops was to gather input and advice on these ideas.

way we use land and in the way we produce and consume goods.[2] Reduced materials demand, material efficiency, and circular economy solutions are therefore critical strategies for achieving a net zero world by the middle of the 21st century, in line with the 2015 Paris Agreement on climate change. In the Sixth Assessment Report (AR6) by the WG III of the Intergovernmental Panel on Climate Change (IPCC) on mitigation of climate change, published in April 2022, the circular economy is mentioned for the first time by the IPCC as a solution for climate-change mitigation, applicable to many sectors of the economy. It is considered a 'transformative megatrend', alongside digitalization and the sharing economy, that will reshape value chains and drive innovation in service delivery towards higher efficiency.[3] The IPCC also recognizes that both sharing and circular economies have been commonplace in developing countries, where reuse, repair, waste collection and recycling form the core of informal economies facilitated by human interventions.

Enhancing biodiversity gain

UNEP's International Resources Panel estimates that resource-extraction and -processing are an underlying cause behind 90 per cent of biodiversity loss and water stress impacts.[4] The circular economy offers a range of solutions with positive environmental impacts that ultimately also benefit biodiversity. These include lower emissions and pollution levels, improved land productivity and better soil health via soil regeneration techniques, hydro- and aquaponics, vertical farming, surplus food redistribution and revalorization of organic waste by biorefining or composting. Circular economy solutions therefore support the Post-2020 Global Biodiversity Framework that is being developed by the UN Convention on Biological Diversity.

Preventing pollution

Pollution is one of the main drivers of biodiversity loss and is becoming an increasing risk to human health and livelihoods. Pollution has a disproportionate impact on developing countries and vulnerable populations, which tend to be the recipients of illegal waste shipments or are forced to live in proximity to sources of pollution. Developments at the multilateral level in 2022 have elevated the role of the circular economy in pollution prevention. At the latest UNEA 5.2 conference, convened in March 2022, governments adopted a resolution on a global plastics pollution treaty, in which circular solutions will play a key role in efforts to reduce plastics in the environment.

The UNEA 5.2 resolution is a good example of multilateral action. However, current multilateral efforts to tackle growing and multiple pollution crises remain piecemeal.

[2] Ellen MacArthur Foundation (2019), 'Completing the Picture: How the Circular Economy Tackles Climate Change', https://ellenmacarthurfoundation.org/completing-the-picture.
[3] IPCC (2022), *Climate Change 2022: Mitigation of Climate Change, Working Group III contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge and New York: Cambridge University Press, https://www.ipcc.ch/report/sixth-assessment-report-working-group-3.
[4] International Resources Panel (2019), *Global Resources Outlook 2019*, Nairobi: United Nations Environment Programme, https://www.resourcepanel.org/file/1172/download?token=muaePxOQ.

Contributing to human development

There is a need to better link circular economy solutions and global development efforts. The circular economy can tangibly improve the human development approach, which gives too little consideration to environmental sustainability.[5] Between 400,000 and 1 million people die each year in developing countries because of diseases related to mismanaged waste.[6] Circular economy solutions can significantly reduce pollution and mismanaged waste that affects the health of communities around the world, especially that of women and children. In fact, circular solutions will be essential to achieve the Sustainable Development Goals (SDGs) targets on good health and well-being, reducing inequality and eradicating poverty. Furthermore, in the context of the UN's 2030 Agenda for Sustainable Development and the SDGs, aligning circular economy with the decent work agenda can create higher-quality jobs and livelihoods, as well as improved and affordable access to essential goods and services.[7]

A social perspective on the circular economy centres on need satisfaction and well-being as the central goals of economic activity. In this approach, the focus is expanded from mass-producing goods and services that are assumed to fulfil needs, to instead focus on needs first and then to determine what types of products, services, relationships and institutions will help to meet them. Thus, a transition to a socially embedded and inclusive circular economy could help satisfy needs in more resource-efficient ways.

Globally coordinated action on the circular economy is required

The transformation to an inclusive circular economy is a promising avenue to shift focus from treating the symptoms of an unhealthy planet to addressing root causes, but this transition requires global coordination. The economic system based on the wasteful, linear use of resources is a root cause for environmental degradation and global inequalities. Meanwhile, multilateral action to prevent environmental harm is largely organized as a regime complex; consisting of multiple, but separate, negotiating platforms for issues such as climate change, desertification, plastics pollution or biodiversity loss. While these issues are interconnected, international mechanisms to address the underlying systems and root causes behind social injustices and environmental harms remain underdeveloped.

[5] Schröder, P., Lemille, A. and Desmond, P. (2020), 'Making the circular economy work for human development', *Resources, Conservation and Recycling*, 156(104686), https://doi.org/10.1016/j.resconrec.2020.104686.
[6] Williams, M. et al. (2019), *No time to waste: Tackling the plastic pollution crisis before it's too late,* Tearfund, Fauna & Flora International, WasteAid and The Institute of Development Studies, https://learn.tearfund.org/-/media/learn/resources/reports/2019-tearfund-consortium-no-time-to-waste-en.pdf.
[7] Schröder, P., Anggraeni, K. and Weber, U. (2019), 'The Relevance of Circular Economy Practices to the Sustainable Development Goals', *Journal of Industrial Ecology*, 23(1), pp. 77–95, https://doi.org/10.1111/jiec.12732.

The circular transition is highly complex, not least because our current production and consumption systems are global where material resources are extracted, transported, used and wasted along complex global value chains.[8] Restructuring of high-impact value chains and industrial strategies according to circularity principles should be an urgent priority for governments and global brands to reduce environmental risks and supply-chain vulnerabilities. Multinational companies with leverage to reshape value chains will have a particular responsibility in this transition. Their cooperation with suppliers, micro, small and medium-sized enterprises (MSMEs) and the informal sector in developing countries will be key to success.

Individual countries and regions are moving forward on the circular economy agenda. Governments across the world are already beginning to set national plans, roadmaps and targets for national circular economy developments, and companies are setting targets to achieve higher degrees of resource efficiency and reduction of waste and pollution through circularity. Examples include the roadmap developed by Finland in 2015[9] or the Chilean 'Roadmap for a Circular Chile by 2040'.[10] The EU's Circular Economy Action Plan calls for promoting the global circular economy transition systematically.[11] On the regional level, for example, ASEAN adopted the 'Framework for Circular Economy for the ASEAN Economic Community' in October 2021, which includes a long-term vision and priority areas for action.[12] The African Circular Economy Alliance identified 'Five Big Bets for Africa's path to circularity',[13] highlighting the opportunities for increased circularity in key sectors that will support the economy, jobs and the environment on the continent.

Despite some progress at the national level, there is no mechanism that facilitates and coordinates the circular economy transition at the global level.

Despite some progress at the national and regional levels, there is no mechanism that facilitates a global circular economy transition at the pace and scale necessary. Action at the individual country level is encouraging, but countries have shown differing levels of ambition, capacity and progress towards circularity. Interpretations of what constitutes a circular economy also vary from nation to nation. This creates particular challenges for realizing an inclusive global transition. For example, enacting ambitious circular economy

[8] World Bank (2022), 'Trade (% of GDP)', https://data.worldbank.org/indicator/NE.TRD.GNFS.ZS.
[9] Sitra (2016), *Leading the cycle: Finnish road map to a circular economy 2016–2025*, Helsinki: Sitra Studies, https://www.sitra.fi/app/uploads/2017/02/Selvityksia121.pdf.
[10] Ministerio del Medio Ambiente (2021), *Roadmap for a Circular Chile by 2040*, Santiago: Ministerio del Medio Ambiente, https://economiacircular.mma.gob.cl/wp-content/uploads/2022/01/HOJA-DE-RUTA-PARA-UN-CHILE-CIRCULAR-AL-2040-EN.pdf.
[11] European Commission (2020), 'A new Circular Economy Action Plan For a cleaner and more competitive Europe', https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1583933814386&uri=COM:2020:98:FIN.
[12] ASEAN (2021), *Framework for Circular Economy for the ASEAN Economic Community*, October 2021, https://asean.org/wp-content/uploads/2021/10/Brochure-Circular-Economy-Final.pdf.
[13] African Circular Economy Alliance (2021), 'What are the Five Big Bets for Africa's path to circularity?', https://www.aceaafrica.org/5-circular-bets.

policies in one country, such as strict circular product design requirements, will create ripple effects along the entire length of global value chains, resulting in potentially negative impacts on producers in other countries which are not prepared or able to meet such standards. It is therefore essential to ensure those countries that are starting the journey are not adversely affected by the actions of those further down the road, but also to ensure those further along the route are supported and are able to deliver on their domestic circular economy goals.

Therefore, calls for globalizing circular economy by the scientific research community[14] have highlighted the need to move beyond fragmented approaches to deal with the complexities and have emphasized the need for international alliances to promote large-scale experimentation of circular models. In the science journal Nature, it has been suggested that a global initiative to advance the circular economy should be led by the UN and should involve stakeholders such as the G20, the World Economic Forum, industry and civil society organizations. National level policies, missions and incentives should be developed to spread circular economy practices worldwide.[15]

Promisingly, the UN has recognized that the complexity of the circular transition requires a united response. During the Preparatory Meeting for Stockholm+50 of the United Nations General Assembly on 28 March 2022, representatives of several member states, Major Groups and other stakeholders emphasized the need to build and strengthen global approaches to the circular economy.

Furthermore, the March 2022 UNEA 5.2 resolution on '[e]nhancing circular economy as a contribution to achieving sustainable consumption and production' recognizes the importance of inclusive multilateral and multi-stakeholder dialogues on sustainable consumption and production, resource efficiency and the circular economy to promote sustainable development.[16] The resolution highlights the need to ensure that the world continues to develop practical solutions regarding circularity of the economy as one of the sustainable development pathways, that it addresses the full life cycle of materials from design, production to waste prevention and management, and that it ensures coherence and coordination of activities at the national, regional and international levels.

This wide recognition of the circular economy as an important principle for sustainable development has prepared the path for global uptake by the UN system, including country-level implementation by both UN agencies and member states.

[14] Geng, Y., Sarkis, J. and Bleischwitz, R. (2019), How to globalize the circular economy, *Nature,* 565, 10 January 2019, pp. 153–55, https://doi.org/10.1038/d41586-019-00017-z.
[15] Ibid.
[16] UNEP (2022), *Resolution adopted by the United Nations Environment Assembly on 2 March 2022 – 5/11. Enhancing circular economy as a contribution to achieving sustainable consumption and production*, Nairobi: United Nations Environment Assembly of the United Nations Environment Programme, https://wedocs.unep.org/bitstream/handle/20.500.11822/39747/K2200701%20-%20UNEP-EA.5-Res.11%20-%20ADVANCE-.pdf?sequence=1&isAllowed=y.

How does the circular economy address Stockholm+50 priorities?

Stockholm+50 offers global leaders a unique opportunity to harness the legacy of 50 years of multilateral environmental engagement. The conference and its outcomes can serve as the institutional anchor for a globally coordinated process to elevate circular economy approaches. Embedding circular economy solutions firmly into the international system could accelerate implementation of the SDGs and shape the emerging global sustainability agenda beyond 2030.

Circular economy: a connecting theme across all Stockholm+50 Leadership Dialogues

The Stockholm+50 Leadership Dialogues[17] were organized as collaborative and multi-stakeholder events with representation from all Major Groups. In the draft background documents developed during the three Stockholm+50 Leadership Dialogues, the importance of circular economy solutions to achieve sustainable consumption and production is repeatedly emphasized.

These documents also state the need to establish an inclusive, multilateral and multi-stakeholder dialogue on pathways to achieve sustainable consumption and production, including through resource efficiency and circular economy. Furthermore, the Leadership Dialogues are framed against the background that urgent system-wide transformations of high-impact sectors are required to accelerate the shift to more sustainable consumption and production, including through the adoption of circular economy principles.

In the draft background documents for the three Stockholm+50 Leadership Dialogues, the importance of circular economy solutions to achieve sustainable consumption and production is repeatedly emphasized.

Broadly speaking, circular economy solutions can be adopted and implemented as a systemic approach to global sustainability challenges such as climate change, biodiversity loss, pollution and human development. In the specific context of Stockholm+50, such solutions can address some of the key objectives outlined in the Leadership Dialogue documents, including:

- Actions for recovery in key COVID-19-affected sectors and high-impact value chains such as energy, food and manufacturing;
- Recovery investments to accelerate re-skilling for the sustainability transition, including required advances in clean technologies, especially in developing countries;

[17] Stockholm+50 (2022), 'Informal Working Groups for the Leadership Dialogues', https://www.stockholm50.global/participate/informal-working-groups.

- Ensuring that technology cooperation is scaled-up to support developing countries in addressing the impact of the COVID-19 pandemic while also achieving the SDGs;
- Harnessing innovations and digital technologies for transparency and disclosure;
- Improving labour conditions and gender equality, and creating decent jobs;
- Improving South–South and North–South cooperation and knowledge exchange to support innovation and progress, respecting and understanding domestic contexts and constraints;
- Transformation of high-impact sectors aligned with the SDGs and leaving no one behind;
- Building on existing green finance initiatives for the climate and nature.

A successful Stockholm+50 outcome

Stockholm+50 wishes to mobilize the global community behind strengthened cooperation and accelerated action. The conference represents a unique opportunity to harness political commitment to tackle climate change, biodiversity loss and pollution at a systemic level, through new and innovative initiatives. Given the importance of the circular economy in delivering on the Stockholm+50 vision of 'a healthy planet for the prosperity of all', the concept should feature strongly in all Leadership Dialogues and parties should commit to concrete action to make the global economy circular and inclusive. To deliver change at the necessary scale, this commitment and ambition must also be translated into actionable initiatives with ambitious timelines.

The need for a global roadmap process for an inclusive circular economy (subsequently referred to as 'the roadmap') could be formally recognized at Stockholm+50, alongside commitments to initiate such a process after the conference. In doing so, the roadmap could become a key legacy of the conference. UN member states and wider stakeholders have an opportunity to unite behind the idea at Stockholm+50, to initiate the process and to commit resources to ensure its full implementation.

A global roadmap for an inclusive circular economy

To accelerate and broaden the implementation of inclusive circular economy solutions which help to deliver on the SDGs, a global roadmap process is required. This could: (1) identify a collective vision for the circular transition supported by; (2) high-level goals; and (3) an action plan that brings together perspectives, experiences and resources from the Global South and Global North and aligns with science-based targets required to avert the worst impacts of climate change, biodiversity loss and pollution.

Developed through a Chatham House-led co-design process, including participatory workshop discussions and consultations with a broad array of

stakeholders, this paper outlines the rationale and conceptual framework for such a roadmap process. Essentially, why, what and who.

Why do we need a global roadmap process?

The development and implementation of a roadmap process would help to address many of the challenges facing the global circular economy transition and also those related to realizing humanity's wider environmental and human development goals. We outline six main benefits of undertaking such a process (see Figure 1).

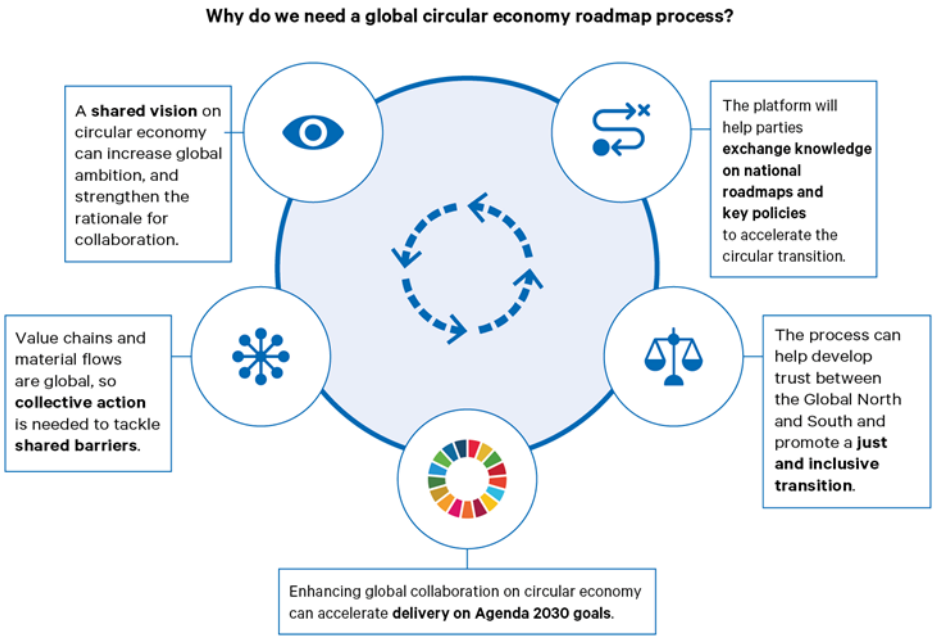

Figure 1. *Why we need a global roadmap for an inclusive circular economy*

Delivering on 2030 Agenda goals

The roadmap could seek to identify collective areas for action which help ensure alignment with science-based targets and relevant goals outlined in SDGs on sustainable resource use. This could include SDG 12.2 ('...achieve the sustainable management and efficient use of natural resources'), SDG 9.4 ('...upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes') and SDG 8.4 ('Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation'.)

The roadmap could seek to identify collective areas for action which help ensure alignment with science-based targets and relevant goals outlined in SDGs on sustainable resource use.

The roadmap process and its anticipated outcomes should be designed so that the circular economy is leveraged to deliver not only on green industrialization, jobs and resource efficiency, but also on wider societal goals including human development and needs, contributing in particular to poverty eradication (SDG 1), to good health and well-being (SDG 3) and to gender equality (SDG 5). Furthermore, the process would provide a mechanism to encourage and facilitate global partnerships (SDG 17).

Objectives and action points in the final roadmap should extend beyond the 2030 Agenda, to 2040 and 2050. They should also remain flexible to enable adaptation to changing circumstances of global cooperation on environment and development during this timeframe.

Development of a shared vision

A shared vision for an inclusive circular economy is needed to increase global ambition and to strengthen the rationale for global collaboration. The process of creating a shared vision will enable the exchange of experiences between countries with advanced circular economy strategies and those who are just beginning their circular transition.

A global circular economy vision and supporting goals will provide strategic direction for national circular economy roadmaps and for companies seeking to benchmark circular ambitions in corporate strategies. It will even be beneficial for defining technical criteria for activities that make a significant contribution to circular economy objectives, such as in green finance taxonomies.

A forum for collective action on shared barriers

A global approach is required both because of the interconnected nature of value chains and because there are barriers to circular economies that are common to all countries. Globally, markets for circular goods and services are underdeveloped. Financing gaps for circular business models also need to be addressed. Realising the untapped potential to create new jobs and decent work in the circular economy will require closer value-chain cooperation. Coordination on the international level through a roadmap process will be necessary to avoid unintended consequences, to ensure that all countries benefit from the transition and to maximize synergies between countries.

Building trust between Global North and South

A roadmap process that is designed, coordinated and implemented in an inclusive manner will help to foster trust and willingness to collaborate between countries.

In addition to being inclusive, the roadmap process will need to focus on promoting deeper collaboration on circularity among countries of the Global North and those in the Global South. The COVID-19 pandemic has widened the economic gaps between Global North and South. An uncoordinated and non-inclusive approach to the circular economy will likely widen this gap, especially if countries pursue the circular economy to boost economic competitiveness,

rather than to address social and environmental challenges.[18] Recognizing the Global North's continued environmental impact on the Global South, the roadmap process could facilitate more equal partnerships to support countries that are economically vulnerable to disruptions.

Knowledge exchange on key policies and roadmaps

Policymakers and business leaders are realizing that many issues that prevent higher degrees of circularity in national economies require multilateral solutions at the global level. Circular economy uptake requires multilateral policy dialogues, as well as for circular principles to be better embedded across multilateral environmental agreements and international environmental cooperation. Specifically, a roadmap process would support the implementation of the UNEA resolution of the global plastics pollution treaty.

Therefore, a coordinated international approach is needed to avoid the creation of a patchwork of fragmented solutions, to reduce friction across borders, and to lower the costs of the circular economy transition. The five universal policy goals identified by the Ellen MacArthur Foundation provide a foundation for discussion on policies that will need to be adopted internationally to enable the transition.[19] These goals are to: (1) stimulate design for the circular economy; (2) manage resources to preserve value; (3) make the economics work; (4) invest in innovation, infrastructure and skills; and (5) collaborate for system change.

National circular roadmaps are key strategies that are adopted by a growing number of countries to set the direction and targets for the circular economy transition. So far, there is no equivalent on the global level. Furthermore, if developed in isolation from trading partners and the global community, there are risks of disrupting value chains and missing opportunities to take joint and mutually beneficial action. Countries will benefit from sharing knowledge and expertise on circular transition timetables and strategies to ensure a smooth transition – for example, requirements on the eco-design of products according to circular principles (notably in the EU) must be adaptive to the capabilities of producer countries, while any support given needs to work in practice.

Moreover, in many cases, the environmental, social and economic objectives and policy approaches for the SDGs are developed in silos. In particular, the distributional effects of the circular economy transition will need to be addressed by social protection policies both at the national level and internationally. Countries with an interest in developing circular economy roadmaps, but who may lack the resources to do so, could access best-practice and technical assistance if there was better knowledge exchange on the circular economy in the global community.

[18] Barrie, J., Anantharaman, M., Oyinlola, M. and Schröder, P. (2022). 'The Circularity Divide: What is it? And how do we avoid it?', *Resources, Conservation and Recycling*, 180(106208), https://doi.org/10.1016/j.resconrec.2022.106208.
[19] Ellen MacArthur Foundation (2021), 'Universal circular economy policy goals', https://ellenmacarthurfoundation.org/universal-policy-goals/overview.

What form could the roadmap process take?

The roadmap process could provide an open, transparent, voluntary and inclusive space for all stakeholders to work towards a common vision and to tackle common challenges collectively. Without creating additional multilateral structures, it could enable closer cooperation and support delivery of existing global commitments such as the Paris Agreement and the SDGs in which the circular economy can play a key role.

The process could also be designed to align bottom-up initiatives of high transformative potential with government-to-government coordination on key national policies - in particular, national circular economy roadmaps and action plans. Finally, it could be designed to be able to adapt and to evolve over time as situations and contexts change. As an open process, the roadmap would be easily accessible for stakeholders to join and take part. Any outputs and materials developed as part of the process would be publicly available for use to support implementation at the national level.

[I]t could enable closer cooperation and support delivery of existing global commitments such as the Paris Agreement and the SDGs in which the circular economy can play a key role.

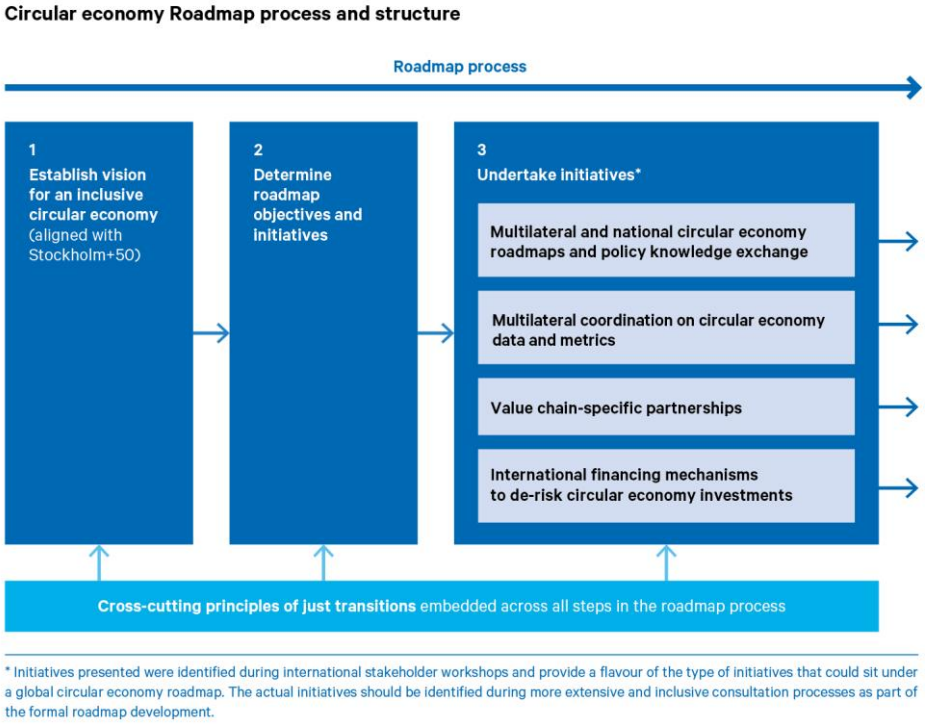

Figure 2. *Framework for a global roadmap for an inclusive circular economy*

A vision for a globally inclusive circular economy

A successful roadmap process will require long-term commitment towards sustainable outcomes despite short-term economic and political pressures. Therefore, as outlined in Figure 2, the roadmap process could start with the development of a shared vision for the circular economy transition, building trust between countries and stakeholders. Examples of questions that the visioning process could address are outlined in Box 1.

Box 1. Key questions for the visioning process:

- What are the priorities for an inclusive circular economy transition?
- What are the key areas for collaboration?
- Who are the key stakeholders to involve, and how to ensure inclusivity?
- What is needed for successful delivery of objectives?
- What are the key barriers that stand in the way?
- How can promising existing approaches be built upon/connected?

Roadmap objectives and initiatives

To achieve a collective vision, clear objectives and actionable initiatives could be identified and implemented as part of the roadmap process. Such initiatives would address key areas for collective action that could deliver mutual benefits and which would not be addressed otherwise on the global level. They could also provide support and connecting existing initiatives that align with the goals.

Four potential areas for initiatives to support the roadmap were discussed during the international stakeholder workshops and consultations convened by Chatham House. These covered the need for: (i) multilateral and national circular economy roadmaps and policy knowledge exchange; (ii) multilateral collaboration on circular data and metrics; (iii) value-chain-specific partnerships; and (iv) establishing international financing mechanisms for inclusive circularity. The four initiatives are interconnected and mutually reinforcing, but can also act as independent, standalone initiatives (see Figure 2). The initiatives outlined in Figure 2 and discussed in further detail below are indicative of those a global roadmap process could undertake. Actual initiatives would be identified during more extensive and inclusive consultation processes as part of the formal roadmap development.

Adopting 'just transition' principles as foundation to guide the global roadmap process

As highlighted by the International Labour Organization (ILO), it is necessary to integrate provisions for a 'just transition' into national plans and policies for the achievement of the SDGs.[20] Without addressing the human and social dimensions of the transition, the circular economy will not deliver on important social goals such as improved health, decent working conditions, or reduced inequality. Just transition and environmental justice considerations are therefore crucial to making the circular economy work for human development. One of the overarching objectives should be to support informal workers and MSMEs affected by the transition. Reducing the burden of pollution from the poorest in society, especially for communities affected by mismanaged waste and degraded environments in developing countries, is also an urgent priority.[21] This is particularly relevant in the context of post-pandemic economic recovery.

Taking guidance from existing just transition initiatives and mechanisms from the climate change and energy transition context, the integration of just transition principles into the roadmap process at the international level will be crucial for widespread ownership and support among countries and stakeholders. For example, in the context of multilateral development banks' (MDBs) work on climate and decarbonization, a set of just transition principles were developed and launched at COP26.[22] A next logical step would be to adapt these principles for the fast-evolving financing frameworks for circular economy transitions. This could be done as part of the roadmap process (See Initiative 4).

Without addressing the human and social dimensions of the transition, the circular economy will not deliver on important social goals such as improved health, decent working conditions, or reduced inequality.

Targeting workers across key value chains affected by the transition will ensure that the circular economy not only supports environmental and economy objectives, but that it also contributes to social objectives and to the 2030 Agenda. An inclusive circular economy is one that acknowledges workers' rights in shaping policies directed at them. Social dialogue and participatory planning are key elements. The roadmap process could facilitate international dialogue on social protection measures, provide support to develop national just transition plans, design and coordinate re-skilling programmes and promote measures to ensure that

[20] ILO (2015), *Guidelines for a just transition towards environmentally sustainable economies and societies for all*, Geneva: International Labour Office, https://www.ilo.org/wcmsp5/groups/public/@ed_emp/@emp_ent/documents/publication/wcms_432859.pdf.
[21] Schröder, P. (2020), *Promoting a Just Transition to an Inclusive Circular Economy*, Research Paper, London: Royal Institute of International Affairs, https://www.chathamhouse.org/2020/04/promoting-just-transition-inclusive-circular-economy.
[22] EBRD (2021), 'MDB support for a just transition', https://www.ebrd.com/what-we-do/mdb-support-just-transition.

structural changes maximize decent work opportunities and leave no enterprises, workers or communities stranded.

Examples of initiatives under the roadmap

This section outlines in further detail the four initiatives identified in the Chatham House-convened workshops and dialogues as important areas for collective action under a global roadmap.

Initiative 1: Policy dialogues and knowledge exchange

The roadmap process would provide an opportunity to align national circular economy action plans and roadmaps with both post-pandemic economic recovery policies and the UN's 2030 Agenda. Circularity and resource-efficiency considerations will be key to creating the right policy frameworks for equitable, sustainable and more resilient economic recovery in the long term. Some circular activities and business models can directly contribute to economic recovery and have near-term economic benefits.[23]

An important policy instrument which requires international coordination for more effective implementation is eco-design. To advance circular solutions at the design stage, countries are pursuing circular eco-design requirements, with the EU making some of those requirements mandatory through its new Sustainable Products Initiative (SPI). The SPI will apply to the broadest possible range of products and will use the proven 'Ecodesign approach' to set product-level requirements that promote material circularity and overall reduction of environmental and climate impacts.[24] The SPI will have profound consequences for both EU and non-EU upstream producers and suppliers who will need to adapt design and production methods to meet the increased requirements.

Another important policy instrument requiring international coordination is extended producer responsibility (EPR). A global partnership could advance the harmonization and implementation of the EPR principle at the global level for many product categories and sectors. A lack of regulatory coherence of national EPRs currently limits the potential of this policy instrument to enhance circularity of resources across value chains.

[23] Material Economics (2021), 'The Circular Economy and COVID-19 Recovery: How pursuing a circular future for Europe fits with recovery from the economic crisis', https://materialeconomics.com/publications/publication/circular-recovery.
[24] European Commission (2022), 'Questions and Answers: Sustainable Products Initiative', press release, 30 March 2022, https://ec.europa.eu/commission/presscorner/detail/en/QANDA_22_2014.

An anticipated outcome of Initiative 1 would be the identification of specific actions to be addressed on the multilateral level to facilitate both multilateral and national policy coordination on key issues.

Potential objectives:

- Identify and design key policies for national level implementation that are needed to leverage circular economy solutions for SDGs;
- Provide coordination and support at the multilateral level to facilitate national implementation;
- Enable countries to take action to achieve higher degrees of circularity on national and sub-national levels;
- Focus on creation of new employment and on addressing distributional aspects (to create co-benefits with social objectives); and
- Facilitate harmonization or mutual recognition of new product policies and eco-design standards across jurisdictions (by leveraging existing initiatives and stakeholder networks that have developed in the ISO circular economy standards context).[25]

Initiative 2: Multilateral coordination on circular metrics and data

The mainstreaming and standardization of robust circular economy metrics allow governments to effectively design, implement and evaluate circular economy policy and legislation. It also provides a shared language with which to conduct global monitoring of progress towards a circular economy and the relevant SDGs.[26]

Several countries (or regions) have already developed – or are in the process of developing – circularity metrics and indicators. The European Commission, for example, adopted a monitoring framework encompassing 10 individual indicators for the circular economy, which aim to assess progress towards a circular economy in the EU and its member states. China, France, Germany, Japan and the Netherlands have introduced national level indicators.[27] Several other countries (such as Austria, the Netherlands, Norway and Scotland) and cities (such as Glasgow and Quebec City) have also conducted circularity gap assessments.[28] Despite individual progress at the city, national or regional level,

[25] ISO (2022), 'ISO/WD 59004: Circular economy – Framework and principles for implementation', https://www.iso.org/standard/80648.html.
[26] SYSTEMIQ (2021), *Making the Circular Economy Count*, Munich and London: acatech/SYSTEMIQ, https://www.systemiq.earth/wp-content/uploads/2021/08/CE-Metrics-Report_Final.pdf.
[27] European Commission (2018), 'Measuring circular economy - new metrics for development?', 24 April 2018, https://ec.europa.eu/newsroom/env/items/624232/default.
[28] Circle Economy (2022), 'The Circularity Gap Reporting Initiative: a global score for circularity', https://www.circularity-gap.world/countries.

there has yet to be discussion at the multilateral level on how these metrics and indicators can feed into a robust global monitoring process.

Circular metrics and indicators are also critical at the corporate level, enabling progress towards circularity to be monitored and preventing greenwashing. In addition to environmental metrics, data and information on social aspects of the circular economy such as working conditions (which are crucial for corporate sustainability due diligence) will be needed. Finally, metrics are also necessary for standardized financial and non-financial reporting to facilitate the flow of financing and resources.

To support companies in monitoring and reporting their circular transition, a range of assessment and reporting tools and metrics have been launched with varying levels of maturity. However, despite the utility offered by these metrics, most companies lack the expertise, awareness and data access to use them effectively.[29]

Data collection and access is a particular challenge, where supply-chain data is either not collected at all or is not readily available. This hampers the ability of governments and private sector actors to adopt, use and report on circular metrics and to implement circular solutions (such as digital product passports) that will be needed to facilitate trade in circular goods and services. One key driver for this is the low levels of transparency and traceability across global value chains, where accurate, traceable and secure data about the flows and stocks of most materials are scarce. There is a need for multilateral collaboration on the development of minimum supply-chain transparency and traceability requirements, and of the necessary protocols and systems for enabling such data transfer.

An additional factor inhibiting the development of shared indicators is ongoing contestation and divergence in opinion on the definition of circularity. There is a need for multilateral dialogue to explore ways to either to overcome or to work around this issue.

Coordinated action under this initiative is needed for the development of a pathway towards the development and use of common circularity indicators, metrics and targets. This would also support coordinated action on the development of data governance protocols and mechanisms to improve value-chain transparency and traceability. The initiative could also identify areas for capacity-building support to ensure the development of such metrics and indicators is done in a fair and inclusive way, aligning with just transition principles.

Potential objectives:

[29] Circle Economy and PACE (2020), *Circular metrics for business: Finding opportunities in the circular economy*, Amsterdam: Circle Economy & PACE, https://assets.website-files.com/5d26d80e8836af2d12ed1269/5faa4d272e1a82a1d9126772_20201029%20-%20BCG%20Metrics%20-%20White%20Papers%20-%20The%20Landscape%20-%20210_x_297_mm%20-%20bleed_3_mm.pdf.

- Evaluate best-practice indicators, metrics and tools, and associated barriers to adoption;
- Initiate multilateral discussion on a pathway for the development of mutually recognized and interoperable circular metrics and indicators to enable global monitoring of the circular transition, including both environmental and social dimensions;
- Facilitate the development of cross-border supply-chain transparency and traceability protocols and pilots;
- Identify areas for targeted capacity-building support to ensure the development and adoption of such metrics and indicators does not overburden certain actors, including MSMEs in low- and middle-income countries; and
- Explore how just transition principles can be integrated into a global monitoring framework for circularity.

Initiative 3: Value chain-specific initiatives for circularity

Linear manufacturing industries in developing countries – such as textiles, plastics and electronics – have led to environmental, social and health problems, especially in low- and middle-income countries. A transition to a circular economy in these value chains is necessary to address the environmental and social challenges associated with linear models of industrial development.

Up to 80 per cent of the environmental impact of a product can be tackled at the design stage, but most circular economy solutions to date have largely focused on the end-of-life stage to build recycling capacity and to strengthen markets for secondary raw materials. For the world to produce and consume more sustainably, an upstream focus is required. This means that products must be designed for reduced toxicity, improved durability, ease of disassembly, repair, remanufacture, reuse and recycling. Furthermore, eco-design of products offers a pathway for manufacturers to make measurable progress towards SDGs associated with natural-resource stewardship by advancing sustainable consumption and production. On the global level, ISO is in the process of developing standards and frameworks for circularity, as well as guidance, supporting tools and requirements for the implementation of circular activities across value chains.[30]

Value-chain coordination, knowledge-sharing and capacity-building are required to help developing-country suppliers and MSMEs to meet evolving circular economy standards and eco-design requirements for products. Partnerships on key value chains could gather countries and manufacturers in an international coalition to advance high-impact circular eco-design solutions, while ensuring these new standards are harmonized or mutually recognized across jurisdictions. The value-chain partnerships could also identify where producer countries, especially MSMEs in key value chains, will require circular capacity-building to secure their continued access to markets where eco-design criteria are implemented.

The value-chain partnerships could also seek to establish a mechanism through which technical assistance and potential finance is provided for producer countries to upgrade infrastructure and production facilities for circularity. Furthermore, existing circular design practices from countries in the Global South – including traditional and indigenous practices – could be promoted, shared, and adopted internationally.[31] Circular products from countries and communities in the Global South will require targeted support to access markets in the Global North.

[30] ISO (2022), 'ISO/WD 59004'.
[31] Craigen, A. (2021), 'For a truly circular economy, we need to listen to indigenous voices', UNDP blog, 11 November 2021, https://www.undp.org/blog/truly-circular-economy-we-need-listen-indigenous-voices.

Potential objectives:

- Facilitate high-level policy–industry coordination to create an enabling environment for the uptake and implementation of circular solutions across value chains;
- Build an international coalition to advance high-impact circular eco-design solutions in selected value chains; Capacity-building to support developing-country suppliers and MSMEs in meeting evolving circular economy standards and eco-design requirements for products; and
- Promote circular economy practices from developing countries, including traditional and indigenous practices.

Example value-chain initiative: Electronics and e-waste

E-waste is the fastest growing waste-stream internationally: 53.6 million metric tonnes of e-waste were generated worldwide in 2019, an increase of 9.2 tonnes in five years.[32] In industrialized countries, it is difficult to hit collection targets, while low- and middle-income countries lack appropriate treatment facilities and financing for recycling such waste. Exports from industrialized countries of used products with short lifespans also add to this burden.

Much of the e-waste generated is traded illegally, and is disassembled and recycled under poor conditions, resulting in both detrimental health impacts for workers and environmental pollution – particularly in low- and middle-income countries. Informal collectors and recyclers in those countries make a living from recovering the valuable materials, often causing major harm to communities' health and to the environment through improper recycling processes and dumping or burning of non-valuable parts. Poorly managed e-waste therefore impedes efforts to achieve SDG targets.

Applying circularity principles to e-waste and the electronics value chains more broadly presents new economic opportunities. A coalition of industry and civil society under Initiative 3 could aim to address illegal transboundary movements of e-waste, by supporting: (i) actions to improve the implementation of Basel Convention Prior Informed Consent; and (ii) information-gathering on e-waste trade for appropriate recycling and pilot projects within regional groups or between key trade bilateral partners. Coalition partners can provide project support, from design and implementation to examples of good governance.

A global partnership could also support capacity-building and improve labour standards in developing countries, as well as help to bridge the digital divide and address skills gaps. This partnership could create new momentum behind the action agenda for circular electronics developed by the Platform for Accelerating Circular Economy (PACE) and could build on existing initiatives such as the E-waste Coalition, PREVENT E-Waste Working Group or Solving the E-Waste Problem (StEP). A joint secretariat representing both governments and industry could ensure coordination across both the public and private sectors.

[32] ITU (2020), 'Global E-waste Monitor 2020', https://www.itu.int/en/ITU-D/Environment/Pages/Spotlight/Global-Ewaste-Monitor-2020.aspx.

Initiative 4: International finance mechanism to de-risk circular investments

This initiative would address the urgent need to de-risk private sector investments for circular solutions across global value chains. The availability of finance is a precondition to drive innovation towards circularity in industry and manufacturing, and enable inclusive solutions for collection, recycling and waste management sectors. A global circular economy finance mechanism could provide investments and financing for repair, recycling and remanufacturing initiatives around the world, including for informal sector initiatives in the Global South. A multilateral circular economy fund could finance circular innovations across multiple sectors, including waste management, manufacturing, the built environment, water and sanitation, agriculture and renewable energy. MSMEs in particular need financing solutions. Blended finance instruments and investment guarantees that support public–private collaboration offer a wider range of possibilities to scale circular economy investments.

Initially, the mechanism could be based on existing waste management programmes of MDBs and expand their scope for circular solutions at the higher end of the waste hierarchy. A medium-term objective could be to set up a dedicated circular economy fund hosted by, for instance, an MDB. Furthermore, the just transition principles developed by MDBs for the climate and energy transitions will have to be expanded and adapted to the circular economy transition.[33] Other intergovernmental bodies, like the Technology Facilitation Mechanism of the Addis Ababa Action Agenda and the Inter-agency Task Force on Financing for Development, could also help to advance investments for the circular economy and the SDGs, e.g. as distributors of the fund.

The economic rationale for a global circular economy finance mechanism is to move beyond hazardous recycling to create markets and businesses for higher-value circular economic activities — particularly remanufacturing and repurposing models. Such a mechanism could support market development and new trade opportunities by investing in infrastructure to 'close the loop' on resources and waste. Existing mechanisms to finance climate and biodiversity action rarely encompass circular solutions and may need adjustments to accommodate interventions to keep resources in use for as long as possible.

Finally, green finance taxonomies and corporate-sustainability reporting initiatives with specific criteria for the circular economy are being developed around the world – most notably in the EU and UK. International alignment and global harmonization of approaches is needed to ensure an uptake of circular economy solutions by the financial services industry. An international circular economy finance mechanism could potentially play a role in harmonizing the various approaches across development finance institutions to avoid barriers to cross-border financial flows for sustainable investment, especially those to developing countries.

[33] EBRD (2021), 'MDB support for a just transition'.

Potential objectives:

- Cooperate with coalition of MDBs (e.g. AfDB, EBRD, EIB) to create a dedicated circular economy fund. For instance, aiming at $10 billion by 2030 to support SDG implementation;
- Build-up existing waste management programmes of MDBs, and expand their scope for circular solutions at the higher end of the waste hierarchy (especially for SME finance);
- Create blended finance instruments and investment guarantees that support public–private collaboration to de-risk investments;
- Harmonize circular economy taxonomies internationally to remove barriers to cross-border flows of finance for sustainable investment; and
- Facilitate international standards for reporting on circularity.

Acknowledgements

The authors would like to acknowledge the direct Chatham House support from Anna Åberg, Anum Farhan, Antony Froggatt, Bruna Miguel, Suzannah Sherman, Ruth Townend and Klas Wetterberg. Thanks also to Jo Maher and Chris Matthews from the publications team for their advice and careful editing of this paper, and to Autumn Forecast at Soapbox for the graphic design work.

They would also like to thank the participants from the workshop series and bilateral dialogues. Finally, they would like to thank the Stockholm+50 secretariat for providing the opportunity to convene such a process.