

THE CIRCULAR ECONOMY AND TRADE: SOME QUESTIONS AND POSSIBLE WAYS FORWARD

Working Paper No. 1 in Trade and Environmental Sustainability Series

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This working paper has benefited from comments shared on a previous draft by a group of various stakeholders to whom we are grateful. These insights were shared at a meeting at Quaker House in Geneva on 24 June 2021. This is a work in progress and we welcome further comments. This is the first paper in the series on Trade and Environmental Sustainability, which also includes papers on the topics of environmental goods and services, fossil fuel subsidy reform, and greening Aid for Trade.

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1.1 THE PROBLEM WITH OUR LINEAR ECONOMIC MODEL AND RESOURCE USE

Much of global economic growth has relied on linear "take-make-dispose" approaches, where virgin resources are extracted, traded, and processed into goods, which are then used and discarded as waste or emissions (see Figure 1 below). This has numerous negative impacts on the environment and on human health, and consequently, on the economy.¹

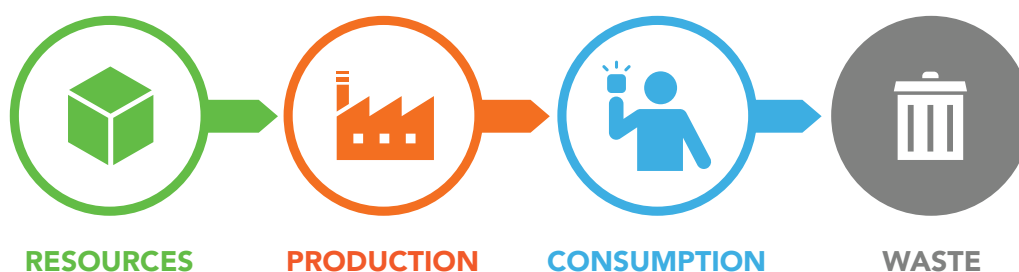


Figure 1. The linear "take-make-dispose" approach.

Planetary boundaries² (including on climate change) have been crossed as a result of centuries of human activities. According to the International Resource Panel, "the use of natural resources has more than tripled from 1970 [...] and 90 per cent of biodiversity loss and water stress are caused by resource extraction and processing." In fact, our natural resource use accounts for about half of humanity's climate impacts (Ellen MacArthur Foundation 2019).

The total consumption of natural resources (including fish, livestock, forests, metals, minerals, and fossil fuels) is expected to rise from 100 billion metric tons per year in 2020 to 180 billion metric tons per year by 2050. For reference, a sustainable level of resource use would be about 50 billion metric tons per year - a boundary we breached back in 2000.³ To indicate the challenge ahead, UNEP's International Resource Panel modelled a best-case scenario with a carbon price of USD 573 per metric ton by 2050, resource taxes, and rapid technological innovation spurred by strong government support, and still predicts resource use of 132 billion metric tons by 2050.⁴

¹Air pollution for example has a USD 2.9 trillion economic cost globally, equating to 3.3% of the world's GDP.
<https://www.weforum.org/agenda/2020/02/the-economic-burden-of-air-pollution#:~:text=Burning%20gas%2C%20coal%20and%20oil,4.5%20million%20deaths%20with%20PM2.5>

²Also see
<https://www.stockholmresilience.org/research/planetary-boundaries.html>

³https://www.resourcepanel.org/file/904/download?token=Yv_oil2o6

⁴Ibid.

1.2 EVOLUTION AND DEFINITION OF THE CIRCULAR ECONOMY

The rising popularity of so-called “circular economy” (CE) models has developed in response to this context of environmental degradation. The term “circular economy” encompasses and builds on a number of similar schools of thought, including Cradle to Cradle, the performance economy, biomimicry, industrial ecology, natural capitalism, the blue economy, and regenerative design. Thus, while the ideas behind the CE are not new, the concept carries value, as it brings together existing practices and concepts under a single framework that encompasses a different conceptual approach to thinking about material use and output. (Van Der Ven 2020)

Van Der Ven (2020) notes that CE could represent a fundamental paradigm shift and transformation, in which waste is significantly reduced or eliminated through design, and remaining waste is understood as a resource. It is characterized by three key principles:

- 1. Design-out waste:** This entails rethinking, reducing and redesigning products. Waste does not exist when biological or technical components of a product are purposefully designed to fit within a biological or technical cycle.
- 2. Keep products/materials in use:** This involves keeping products and materials in the economy through reuse, repair, remanufacturing, and recycling of products.
- 3. Regenerate natural systems:** This requires us to avoid the use of non-renewable resources, and preserve/enhance renewable ones.

A holistic approach to CE can be broken down into several levels and can be illustrated with different “R” concepts. This “multi-R” approach helps outline the CE structure, as illustrated in Figure 2.

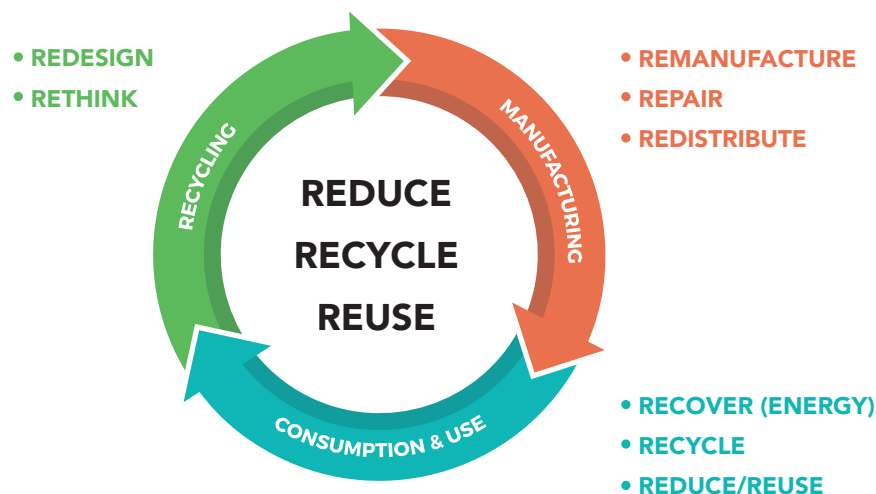


Figure 2. The multi-R approach. Source: Association of Cities and Regions for Recycling and Sustainable Resource Management

The “new ways of doing” put forward by CE approaches have received attention from government representatives at both the national and international level, academia, and major businesses, as well as through the work of community projects and neighbourhood cooperatives.

Amongst practitioners, the discussion around CE approaches has predominantly focused on CE as an “industrial system”, where linear production and consumption can be replaced by circular models. The Ellen MacArthur Foundation, for example, defines CE as “gradually decoupling economic activity from the consumption of finite resources, and designing waste out of the system. Underpinned by a transition to renewable energy sources, the circular model builds economic, natural, and social capital.” The focus here is on CE as a process that in the course of operationalization has transformative potential.

In practice, the CE can cover both industrial processes (the “operational” level) and industrial composition and structure of the economy as a whole (the “economic policy-making” level). Whether applied from a systems or industrial perspective, it replaces the concept of “end-of-life” with reducing, reusing in a different way, recycling, and recovering materials in production/distribution and consumption processes at multiple levels (Kirchherr et al. 2017). The principles of designing out waste, keeping products/materials in use, and regenerating natural systems sit at the core of these models (van der Ven 2020). In turn, CE implementation has social as well as economic and environmental implications, which extend beyond the core focus on resource use.

A CE transition would directly contribute to achieving a number of the Sustainable Development Goals (SDGs), most directly Goal 12, which aims to ensure “sustainable consumption and production patterns”. The circular economy model is also directly aligned with several other SDGs, including Goal 6 (clean water and sanitation); Goal 9 (promoting sustainable industrialization and foster innovation); Goal 11 (sustainable cities and communities); Goal 13 (climate action); Goal 14 (life below water); and Goal 15 (life on land).

1.3 THE POLICY LANDSCAPE FOR THE CIRCULAR ECONOMY

Over the past decade, we have seen integration of CE concepts in the EU’s Circular Economy Action Plan, the Sustainable Product Initiative⁵, the Finnish innovation fund SITRA, China’s five-year plans, and the work of members of the African Circular Economy Alliance. Still, less than 9% of the global economy is now circular, and this percentage is actually falling (Circularity Gap report 2020).

⁵https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12567-Sustainable-products-initiative_en

While different countries' CE policy packages are necessarily distinct, they commonly include a combination of the following measures: different levels of taxation for used, reused or recycled products, reduced value added tax for repair and reuse services, extended producer responsibility schemes, standards and labelling schemes, green public procurement, and extended legal warranties. Most of these policies relate to the second principle of the circular economy - extending the lifespan of products (Van Der Ven 2020).

Cross-stakeholder support for CE has resulted in a wide policy landscape in which CE approaches are being integrated. Policy areas that extend to environmental health - including trade in waste and plastics, the regulation of chemicals and toxics⁶, energy policy and national climate plans - all intersect with discussions on implementing CE approaches both within business and civil society.

These policy frameworks "aim to achieve transition towards a more sustainable economy that reduces its reliance on primary raw materials, operates on principles of re-use and recycling, and encourages changes in consumption patterns." (OECD 2019). In order to deliver on these aspects - including resource efficiency, decent job creation, low-carbon prosperity, a healthy environment, clean production, and sustainable consumption - it is necessary to take a holistic approach by working across a number of policy areas (QCEA 2015). In this type of holistic approach, stakeholders from business, industry, unions and labour organizations from the formal and informal sector, and civil society need to be included in developing CE plans to ensure that the overarching benefits of the circular economy are indeed achieved.

Policy can play an important role by addressing the market failures, policy misalignments and status quo biases that currently hinder the competitiveness of CE business models, including:

- ensuring that the full environmental costs of production and consumption activities are reflected in market prices;
- improving collaboration within and across sectoral value chains;
- ensuring that existing regulatory frameworks are coherent and fit for purpose, and do not serve to preserve an existing status quo;
- improving existing educational and information programs to provide individuals with a better understanding of the unintended consequences of their consumption choices;
- promoting the supply of circular products or demand for them. For supply, this includes eco-design standards, bolstering extended producer responsibility (EPR) schemes, and provision of targeted R&D funding (OECD 2019).

⁶International trade in waste is regulated by the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (The Basel Convention). The Montreal Protocol on Substances that Deplete the Ozone Layer, the Stockholm Convention on Persistent Organic Pollutants, the Rotterdam Convention on Hazardous Chemicals and Pesticides, and the Minamata Convention on Mercury partially complement the Basel Convention. Note that global regulation of trade in (hazardous) waste, chemicals, and pollutants is fragmented

into several conventions, which leaves gaps in this governance system and is not in the interest of human and environmental health. The international community should regulate ALL harmful substances, which is currently not the case. Also see https://gridarendal-website-live.s3.amazonaws.com/production/documents/s_document/524/original/Chemicals_final_lores.pdf?1585206964 and <http://library.fes.de/pdf-files/iez/15607.pdf>

1.4 INTERSECTIONS OF THE CIRCULAR ECONOMY WITH OTHER POLICY AREAS AND THE POLICY LANDSCAPE FOR MULTINATIONALS

The impacts of a transition to an inclusive circular economy also extend beyond the remit of policies that explicitly take CE as their focus. Preston, Lehne and Wellesley observe that “CE continues to be understood primarily as a waste management and recycling strategy, but the economic opportunities are far broader and more diverse.” (2019 p.2). CE approaches bear broad implications for both the economic incentives that drive consumption - including the valuation of services, the cost of waste, the cost of extraction – but also for opportunities related to job creation, low-carbon prosperity, energy savings, climate change mitigation and health and wellbeing. To gain these benefits “it is necessary to take a holistic approach by working across a number of policy areas” (QCEA 2015). Policy areas relating to environmental health - including trade in waste and plastics (Barrowclough and Deere Birkbeck 2020), the regulation of chemicals and toxics (EIA et al. 2020), energy policy (Ellen MacArthur Foundation 2019) and national climate plans (Preston et al. 2019) – all intersect with discussions on implementing circular economy approaches both within the business community and civil society.

The broad policy landscape related to the circular economy makes the inclusion of stakeholders from business, industry, unions and labour organizations, and civil society, crucial in the development of viable action plans that can also be implemented. In the context of scaling up the circular economy, multinational companies must engage both in the implementation of CE activities and the integration of strategic approaches that take into account its wider impacts on business models, the labour market and international supply chains. International agencies – including UN agencies such as UNIDO and UNEP, but also multilateral development banks – can take on a facilitating role in this process with regards to financial investment and knowledge and capacity building (Preston, Lehne & Wellesley 2019). This is to be underpinned by clear guidance from States in the form of regulatory frameworks, that ensure that greenwashing activities, which would disrupt the transition to a CE, is ruled out, and that consumers are supported in changing their preferences towards circular practices such as buying “second-life” products and asset sharing.

2.1 LINKAGES BETWEEN CE AND TRADE: PREDICTED IMPLICATIONS OF CE TRANSITION

Current policy action largely focuses on achieving material circularity at the domestic level as illustrated in the solid arrows in Figure 3 below. However, domestic policies alone may not be enough to facilitate a transition towards a global CE.

The circular economy and international trade are closely linked in numerous ways. The transition towards a CE will have several impacts on trade. Trade occurs at various levels along the product value chain, such as trade in materials and waste for recycling and energy recovery, trade in secondary raw materials (Pacini et al. 2020), trade in second-hand goods and trade in goods for refurbishment and remanufacturing, as shown in the dotted arrows in Figure 3. To avoid complexity, this diagram focuses mainly on exports. However, imports can also be part of the transition to a CE, for example, as secondary raw materials, feedstock, or notably services trade to enhance product service systems (Yamaguchi 2020).

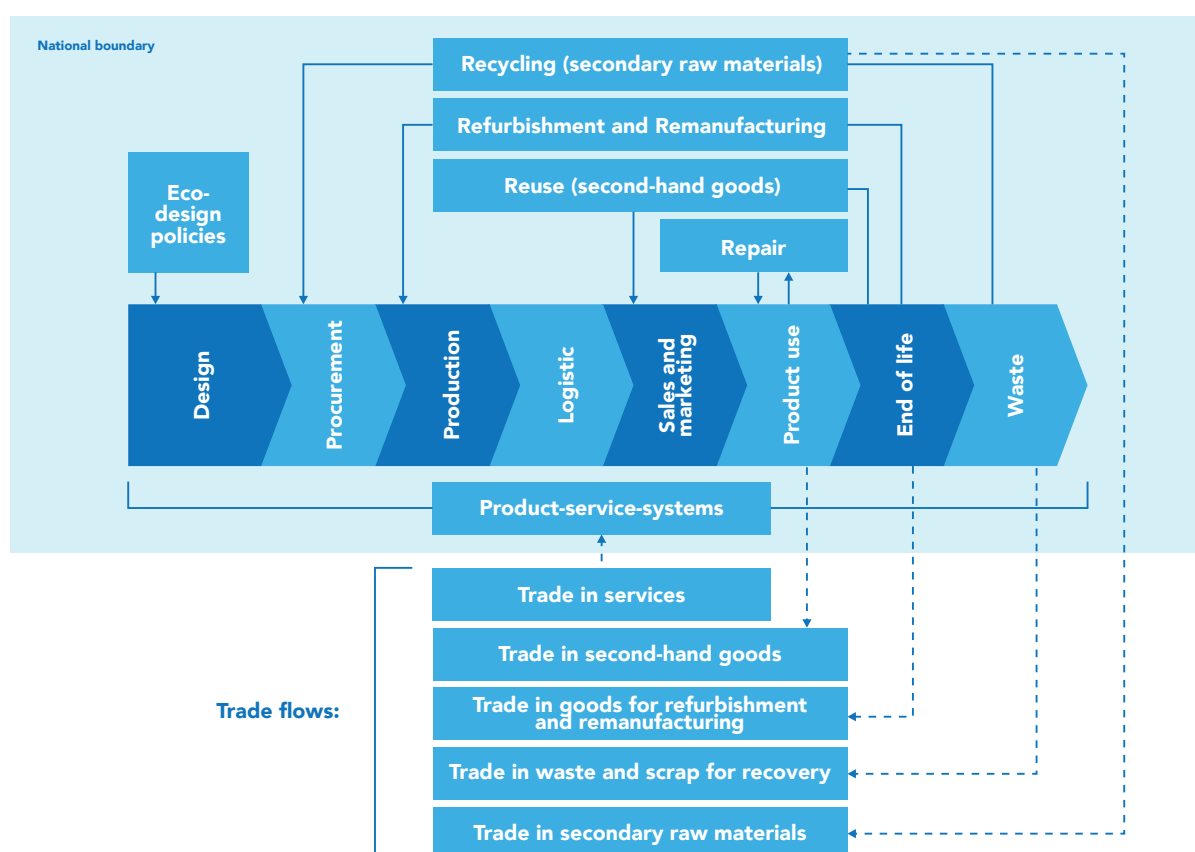


Figure 3. Value chain with CE activities and trade flows. Notes: The chevron arrows in the middle represent steps in the linear ("take-make-discard") economy. Solid lines then represent domestic flows and dotted lines represent international trade flows in support of CE. Source: Sajous (2019).

As partially showcased in Figure 3, the CE transition can also have several impacts on trade flows, including:

- Reduced trade in primary raw materials⁷; increased trade in secondary raw materials⁸;
- increased trade in materials and waste for recycling⁹;
- the emergence of new trading opportunities for services trade, such as waste management, recycling, refurbishment and remanufacturing, reuse, and repair, as well as new business models (e.g., sharing economy);
- a shift in trade towards products that meet circular economy standards;
- increased trade in second-hand goods; and
- circular procurement by subnational and national governments may also provide additional opportunities for international trade (OECD 2018B).

Overall, circular models could help countries make better use of resources already available in their territories, through a change in traditional trade patterns. Growth may occur not in goods but in services, such as access-over-ownership models in a sharing economy (where one e.g., buys access to mobility through car sharing services instead of purchasing a car).

In addition, increased circularity can change production patterns, improving asset utilization rates and creating value chains based on recycling and remanufacturing centres close to where products are used. This could lead to fewer transport-related losses, quicker turnarounds between orders and deliveries, lower levels of carbon dioxide emissions and the creation of decent jobs that cannot be offshored¹⁰. In fact, the International Labour Organization (ILO) has predicted that a transition to an economy based on the principles of reuse, recycling and remanufacturing will create around 6 million new jobs, although this number could in reality be far higher (ILO 2018).

2.2 DOES A CIRCULAR ECONOMY MEAN LESS TRADE?

In developed countries, the circular economy (CE) has been driven in part by the desire to reduce natural resource imports. This gives the impression that the agenda is based on an ambition to achieve “growth within” rather than through international exchange. However, in practice, this assessment underplays the critical role of international trade and cooperation in the CE.

⁷This term refers to materials sourced from mining and extraction activities in their raw form that enter the economic system for the first time (e.g. mineral ores).

⁸This term refers to materials that are already in the economic system and have been recycled. They can be used in manufacturing processes instead of, or alongside, primary raw materials.

⁹Some of the research suggests that trade in waste for recycling will decrease, as adoption of CE principles is

expected to enhance processing of waste within the jurisdiction the waste has been produced. However, most of the research considers trade in waste to be a valuable tradeable product aligned with the objective of the circular economy.

¹⁰Also see [https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/WKP\(2020\)9&docLanguage=En](https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/WKP(2020)9&docLanguage=En)

The impact of the CE on trade is more nuanced than is often suggested. As an economy increasingly relies on reuse, remanufacturing and recycling, lower volumes of raw materials will be needed compared with a business-as-usual scenario (European Academies' Science Advisory Council 2015). The impact on the value of trade, however, is less straightforward. There could be a significant increase in the value of secondary materials traded, since the main thrust of the CE is to use materials in as high a value state as possible. At the same time, as heavier materials may not be exported globally for recycling, we could see the emergence of remanufacturing and reprocessing hubs in certain regions of the world if the added value from economies of scale exceeds the cost of transport.

One example of the uncertainty raised by the CE is the global trade in used lithium-ion batteries. This trade could expand considerably within the next decade, as first-generation batteries used in electric vehicles head for a "second life" in electrical storage systems in homes or on the grid. However, at the moment it is very hard to tell whether this scenario will in fact materialize; prices of new batteries may continue to fall rapidly, or a new type of battery might emerge by 2030.

The intention to promote CE at the national level has at times raised concerns over creating unnecessary trade barriers and has led to disputes between trading partners with regards to trade and domestic policies. At the WTO, in 2013 disputes were recorded in two cases raised by the European Union and Japan, in which it is claimed that the Russian Federation imposed a recycling fee on motor vehicles, giving preferable conditions to domestic manufacturers over their foreign counterparts.

Developments in China's import policies provide another powerful example. In 2013, China announced a new, so-called "green fence" approach. This was partly in response to the falling quality of materials being imported, but the move was also intended to support the country's domestic recycling industry. Rather than introducing new regulations, China tightened inspection regimes for existing policies. Recyclers in the US had to invest in new technology and processes - increasing municipalities' recycling costs - in order to be able to export sufficiently high-quality materials to meet Chinese standards. A single policy change thus led to the global recycling supply chain being upgraded.

In 2018, China put in place a new ban on imports of scrap plastics and unsorted wastepaper. Companies in Europe and the US are again forced to quickly improve the quality of their recyclates or risk being shut out of the largest market for recycled materials (Cole 2017). The new regime presents Europe and the US with an opportunity to improve domestic waste- and resource-management systems.

The "Informal Dialogue on Plastics Pollution" was launched in November 2020 by a group of WTO members under the leadership of China and Fiji in response to dynamics in trade in waste in the previous years. The Informal Dialogue seeks to address the rising environmental, health and economic cost of plastics pollution. It currently has 14 participants and is open to all WTO members. The aim of the group is to study the production and use of plastics across their life cycle and to complement discussions in the WTO's Committee on Trade and Environment (CTE) and other fora. The WTO also has an important role to play in seeking coherence with efforts in other international and regional organizations, and as such in acting as a learning platform, including for lessons learned from implementation of CE policies.

2.3 THE ROLE OF TRADE IN ADVANCING CE

Domestic trade policies potentially provide an important means through which national governments can encourage and incentivize a transition to more circular approaches.

Some measures that national governments could put in place include energy-efficiency requirements for imported second-hand vehicles; minimum percentage requirements for recyclable content in plastic waste; health and safety standards for recycled or recyclable products and materials; quality, health, and safety standards for remanufactured products; and, depending on how they are designed, either expanding or restricting international trade in various categories of desirable and undesirable secondary materials. For example, some countries have banned the import of refurbished mobile phones to prevent the dumping of e-waste, as it turned out that those devices were in general difficult to repair and re-use and ended up in landfill or worse. Classification of e.g., recyclable plastics, will be important to avoid unwanted imports of hazardous waste. Another group of national measures focuses on the liberalization of trade in environmental goods and services (EGS) related to CE, including the reduction or removal of import duties on primary goods used for pollution management and resource management, such as equipment used in recycling plants. Reducing or lowering those import duties and trade barriers on secondary raw materials, such as scrap metal, can lower the capital costs of CE infrastructure and feedstock in import-dependent countries and boost the competitiveness of downstream CE activities (Preston et al. 2019).

Seventeen members of the WTO launched negotiations on an Environmental Goods Agreement (EGA) in July 2014, with the aim of removing trade barriers on EGS. Building on a list of 54 tariff lines selected by the Asia-Pacific Cooperation (APEC) in 2012, negotiators have expanded the list to 340 subheadings, falling into ten categories. Among these categories are “environmentally preferable products”, “resource efficiency” and “solid and hazardous waste management”, all relevant to the circular economy. As trade in EGS is under consideration of the Trade and Environmental Sustainability Structured Discussions (TESSD), it would be important to be mindful of the linkages between EGS and the circular economy and to express these in a workplan for the TESSD.

Technical classifications and definitions of secondary raw materials, waste and hazardous waste form another group of international measures which would be needed to support the circular economy. For example, it is critical that “waste” can be distinguished from “waste for recycling”. In this context, one of the key challenges is developing benchmarks, including in the form of standards, that could help countries differentiate easy-to-recycle waste from waste that is difficult or unfit for recycling. And instead of a myriad of national standards and agreements for the CE, joint standards would give a boost to trade that supports the CE.

In sum, it is important that trade empowers the CE, rather than hampering it. That said, secondary materials and used goods should be allowed to flow freely and be upcycled or repaired in lower cost countries. For example, for used textiles, import tariffs are on average 19%, while for used plastics they are 6% on average. It is important that tariffs and non-tariff measures on cross border trade are low for CE to work. At the same time, products should be traded under good material stewardship standards (such as the requirements placed on secondary plastics by the Basel amendments) or mutually agreed product design (for facilitation of end-of-life recovery). If products do not meet the set standards, countries should be able to ban imports of such products.

3.1 A JUST TRANSITION TO A CIRCULAR ECONOMY

For the transition to a circular economy to be feasible and sustainable, it must support the needs of current growing populations, whilst addressing the resource and environmental challenges that threaten future generations. The SDGs place emphasis on the connection between environmental, economic, and social sustainability; environmental and social justice are inextricably linked. It is on this basis that trade must ensure a just transition to a fully functioning and non-toxic circular economy.

The momentum around efforts to move towards a circular economy must not gloss over social considerations at the local, national, transnational level (e.g. job losses, workers' health and safety, reskilling) and at the international level (in the context of international commitments such as countries' Nationally Determined Contributions under the Paris Agreement, as well as mitigation and adaptation efforts). In particular, those working in the extractive sector will be affected and need support, for example to retrain in order to find employment elsewhere. Careful consideration of the environmental externalities resulting from CE activities - such as the resource extraction involved in creating low-carbon technology - must also be taken into account.

In addition, a "human rights-based approach" to the CE will contribute to effective outcomes. As stated by the Human Rights Council in resolution 10/4, "Human rights obligations and commitments have the potential to inform and strengthen international and national policymaking in the area of climate change, promoting policy coherence, legitimacy and sustainable outcomes." The same probably holds true for building up CE in an equitable and just manner, by ensuring that rights related to transparency, information gathering, and participation are safeguarded.

3.2 IMPACTS OF THE CIRCULAR ECONOMY ON DEVELOPING COUNTRIES

CE pathways will have a major impact on developing country economies both at the national and international level. On the one hand, the receptivity of the developing world's rapidly growing class of consumers to CE practices will likely have an impact on the uptake of this approach. Significant investment, both in terms of finance and capacity-building, is needed to ensure a just transition to a circular economy, based on agreed common rules and standards, as well as meaningful collaboration across the globe.

Exports of products from developing countries could also be affected by emerging CE standards. Change on this front is likely to come in two forms. First, the EU is reviewing all of its eco-design directives that ensure the environmental performance of products to evaluate whether a change in approach is needed. Traditional life-cycle assessments (taking the total production, use, and disposal cycle of a product into account), for instance, do not reflect the

“next use” value of a material or remanufactured product. Second, we are likely to see the emergence of CE awareness campaigns and labelling, either as a single badge (in the style of organic products) or along the lines of A-to-G energy performance ratings. The question is whether such labels will hinder or advance exports from developing countries.

Based on Van Der Ven (2020) we observe that changes to international trade flows - and the associated impact on developing economies - will depend on a number of unknown variables, including:

- (i) the scope of, and speed at which, countries are transitioning towards a circular economy;
- (ii) socioeconomic trends, such as population growth and rising standards of living;
- (iii) the extent to which specific sectors/material streams will be affected by the circular economy;
- (iv) a country's level of dependence on exports of primary raw materials; and
- (v) a developing economy's ability to respond to shifts in the global value chain.

It has been estimated that at least 10% of low-income countries' GDP comes from natural resource rents (OECD 2018A). However, reduced demand for primary raw materials also presents opportunities. It could incentivize developing economies to move away from a commodity-dependent industrial model towards higher value-added industries, by creating the opportunity to develop higher-value downstream processing.

Increased imports in recyclable waste to developing economies can also create opportunities. For instance, such imports enhance demand for emerging sectors such as repair and recycling, which in turn could lead to an improvement in domestic waste management. This also has the potential to generate a significant number of jobs, as product repair tends to be more labour-intensive than manufacturing from raw materials.

For specific developing economies to better understand the impacts of CE, it is important for them to conduct a detailed study on the implications of the circular economy on their industries, economic strategy, and position in global value chains. Such a country-specific study could include a number of different steps:

Step 1: Develop a clear understanding of how shifts in international trade flows will impact different industry sectors. This requires the mapping of key industries and anticipating the changes to these sectors.

Step 2: Map opportunities in emerging sectors, such as trade in services related to waste processing and recycling, refurbishment and (re)manufacturing, reuse, and repair.

Step 3: Once opportunities and challenges have been identified, governments can consider how to strategically use trade agreements to expand opportunities and mitigate any challenges (e.g., by lowering import barriers on recycling equipment or developing standards for second-hand goods).

In the context of international trade, it will be important to recognize how CE development strategies have cross-border effects. CE pathways must not risk leaving behind those economies currently dependent on exports of raw materials and products. In the course of

the transition to a circular economy, developing countries must also be adequately supported to scale up regional capacity, which will enable them to participate in CE value chains. Adequate regulation must also be put into place to avoid waste dumping, whilst the removal of restrictions on trade in services of relevance for the CE will be important in driving business in areas where there is expertise on circular practices (Van Der Ven 2020).

When considering the impacts of CE on developing countries, the effects on the informal waste sector and waste picking should be taken into account. There is a need for improved data collection on waste in developing countries, as most data that can support CE come from OECD members. In many developing countries, waste management, or at least part of it, is carried out informally. Following the CE model should improve the livelihood of the forgotten 1% of the urban population (ILO estimate) whose livelihood is based on waste picking.¹¹

3.3 FOSTERING THE CIRCULAR ECONOMY IN DEVELOPING COUNTRIES

This section is largely based on Preston et al. (2019). Insufficient attention has been paid to CE pathways in developing countries, despite considerable innovation and policy progress. Structural and political conditions, and the rapid pace of growth and industrial development will require different solutions to those adopted in developed countries; for example, the agricultural sector has been afforded minimal attention in global CE discussions to date, but will need to be at the core of developing-country CE pathways. Innovation is already under way in developing countries, in the agricultural sector and beyond, and developing-country governments are beginning to adopt ambitious strategies for more resource-efficient and circular patterns of industrial growth.

Greater focus on circularity in international value chains and on the governance and investment frameworks required to enable a global CE is needed. In 2015, East African countries proposed a ban on imports of secondary textiles to protect their domestic industries, as they were concerned about large volumes of cheap second-hand clothes entering the market. After the United States of America (USA) threatened retaliation, the ban was replaced with an import tax, but the episode highlighted how the trade in secondary materials, if not carefully managed, can lead to tensions with traditional sectors and between countries (Preston et al. 2019). Future import restrictions on second-hand vehicles have also been mentioned in surveys by several developing countries (Kettunen et al. 2020).

Greater cooperation is needed at the global level to agree on common rules and standards for international circular value chains, particularly where they risk displacing traditional workers or are associated with environmental or health risks, as is the case with e-waste (Preston et al. 2019).

¹¹The concept of CE fits perfectly with the mission of the Global Alliance of Waste Pickers <https://globalrec.org/mission/>

With the right enabling conditions, the CE could provide new opportunities for economic diversification, value creation and skills development. Developing countries are in a strong position to take advantage of the new economic opportunities. Moreover, with enough investment, developing countries can “leapfrog” developed countries in digital and materials innovation to embed sustainable production and consumption at the heart of their economies.

Trade and cooperation are key ingredients for accelerating the CE in developing economies, and harnessing opportunities for innovation will depend on leveraging foreign investment. Just as important as financial and material flows will be the exchange of knowledge and lesson-learning between those implementing the CE and those looking for evidence of effective strategies and interventions. Developed-country governments could identify early opportunities for “triple-win” collaboration with developing countries to deliver on trade, the CE, and broader sustainability goals, while multilateral development banks should align investments in climate resilience, biodiversity protection, and sustainable development with the CE.

3.4 THE CIRCULAR ECONOMY AND SUSTAINABLE DEVELOPMENT: IMPLICATIONS FOR GLOBAL COOPERATION UNDER THE WTO AND THE TESSD

The reception and uptake of CE pathways globally rests as much on development needs as environmental and economic interests being taken into account. Tensions around trade in waste, development aid and climate finance present an important role for multilateral and bilateral cooperation on CE initiatives. There has already been significant progress made in the negotiation on hazardous waste under the Basel Convention, providing greater control over the global flows in e-waste (CIEL). Still, many gaps remain in the global architecture for regulating trade in hazardous products.

In the context of the WTO specifically, the Aid for Trade initiative could be particularly relevant in helping support developing countries in taking full advantage of the development opportunities created by the shift to a circular economy (Preston 2019; van der Ven 2020). With Aid for Trade being discussed in the TESSD, linkages between Aid for Trade and CE merit further exploration. However, it is important that these initiatives are fully integrated with other developments in trade. This is to ensure that CE evolves as a collective effort that reflects the interconnectedness along global value chains. As we move into economic recovery following the Covid-19 pandemic, it will also be crucial to ensure that adequate finance is directly leveraged to ensure the feasibility and long-term resilience of the CE transition.

Predicted shifts in trade and their impact on developing countries, plus policy responses, including through trade agreements, are listed in the Appendix to this paper.

4.1 WAYS FORWARD, DOUBTS, AND QUESTIONS

One central conclusion from this note is that the CE is very much intertwined with international trade. This calls for mutually supportive policy and regulatory frameworks. Furthermore, CE will only reach meaningful scale through international coordination and alignment. Therefore, a grounded understanding of its implications for international trade - both within the WTO and beyond - is crucial. Assessing the likely impact of the CE transition on international trade flows will ensure the trade community is actively leveraged in enabling the shift to a sustainable and green economy.

However, the current trade regime is not yet fit for a circular economy. To remedy this, WTO members can expand the positive contribution of trade to a circular economy by:

- (i) improving their collective understanding of how trade interacts with the circular economy;
- (ii) building trust and confidence to engage in mutually beneficial activities related to the circular economy;
- (iii) opening and facilitating trade in key areas of the circular economy such as environmental goods and services¹², e.g., though an EGA; and
- (iv) supporting efforts in developing countries to capitalize on the potential environmental, economic, and social benefits of a circular economy through enhanced trade.

A clearer understanding of traded waste products, secondary resources, and their physical trade flows across a range of sectors is needed to design effective national and international trade policies that support the circular economy. More research studies and analytical work should be undertaken to provide more clarity, keeping in mind the specificities of developed and developing countries, on questions such as the ones in the box overleaf.

In addition to these more technical questions, a rights-based approach is critical to achieving positive outcomes both in the negotiating process and in the development and implementation of CE policies and projects on the ground. Through a focus on empowerment, participation, and transparency, a human rights-based approach to CE can help mobilize society and press for sustainable outcomes. Basic human rights - such as the rights to access to information and full and effective participation in decision-making - increase support for, and public ownership of, CE policies. A rights-based approach also helps to clarify who is responsible for the delivery of key changes and, thus, who can be held accountable where this does not happen or when people are harmed by CE actions.

The TESSD could contribute to advancing the CE agenda by (i) including it as a priority area in the TESSD workplan and discussions; (ii) strengthening the role of the TESSD; (iii) facilitating specific initiatives related to the circular economy (e.g., a roundtable or working group); and (iv) linking Aid for Trade and EGS to CE.

¹²E.g., equipment to sort and process e-waste, recycling equipment, and equipment for extracting secondary raw materials from products in a safe manner could significantly boost access to CE activities. (Preston et al. 2019)

- (i) What impact do export and import regulations of waste and secondary materials have on global value chains?
- (ii) How will the shift from the acquisition and consumption of goods to services in a circular economy influence trade patterns?
- (iii) As extracting secondary materials (e.g., through urban mining) becomes economically and technologically viable, how will this affect low- and middle-income countries dependent on primary resource extraction and exports?
- (iv) How do current trade policies affect the trade costs of circular economy activities?
- (v) How can trade policies improve market access conditions and facilitate trade in circular goods and services?
- (vi) How can we ensure that trade policies do not have unintended environmental consequences (e.g., imports of unwanted waste, illegal waste trade, etc.)?
- (vii) How could circular economy policies and trade policies be aligned to encourage the decoupling of resource consumption from economic growth at the global level without creating unnecessary barriers to international trade as well as undesirable environmental consequences?
- (viii) How do we define key categories of products and develop and harmonize quality standards for the circular economy?
- (ix) How do we provide effective technical assistance for developing economies on CE?
- (x) How could mutual recognition agreements (MRAs) on CE-related standards and conformity assessment offer possible coordination at bilateral or regional levels?
- (xi) How can we avoid an increase in low paid, socially degrading occupations and instead create opportunities for qualitative progress in the social sphere?

What could TESSD aim for? A plurilateral agreement, similar to the WTO's information technology agreement (ITA), whereby like-minded countries could agree to reduce or remove all duties on specific types of secondary materials on a most-favoured-nation (MFN) basis could offer a promising avenue for collaboration. Furthermore, greater coordination on topics that are also under discussion in TESSD (such as aid for trade, EGS, fossil fuel subsidy reform, and climate change) would be useful.

Another option, at a global level, could be to **widen the global CE conversation to include developing countries** and to invest political and financial capital in promoting the development of an inclusive, global CE. Developed-country governments have an important role to play in facilitating a meaningful dialogue on how the international dynamics of CE policies may best be managed.

To come back to the main point raised above, all this suggests that while there will be new dynamics in international trade and the location of production, **the CE will often involve, and indeed depend on, international cooperation.** Open, transparent, and inclusive dialogues are needed about the potential impacts of regulatory changes, so that countries have time to adapt. Mechanisms that allow countries to share their experiences would be helpful in this respect.

Despite the uncertainties involved, all countries can take a proactive approach to adopting a policy package that would mitigate any negative consequences, and leverage the opportunities created by a transition to a circular economy. This will require predicting the anticipated economic and social effects of shifts in international trade flows and establishing a policy roadmap on how to respond to challenges while creating competitiveness in newly emerging sectors. In this context, international trade agreements, the WTO, and the TESSD play a critical role not only in addressing novel technical challenges, such as those related to categorization and definitions, but also in ensuring that the transition towards a circular economy is inclusive and just and promotes environmental integrity.

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APPENDIX: Predicted shifts in trade caused and impact on developing economies

CE Principle	1. Design-out waste	2. Keep products and materials in use	3. Regenerate natural systems
Key policy instruments	Minimum requirement/ standards for product durability, reparability, the reuse of components	<p>Extended Producer Responsibility schemes (EPRs)</p> <p>Taxation on landfill and incineration</p> <p>Different levels of taxation for reused or recycled products</p> <p>Extended legal warranties</p> <p>Green public procurement</p>	Policies to encourage shifts to renewable energy /bans on single-used plastic.
Impact on Trade (predicted)	Strict standards could function as a market access barrier	<p>Lowering of trade in primary raw materials</p> <p>Increase trade in secondary materials</p> <p>Increase trade in second-hand goods</p> <p>Increase trade in waste for recycling</p>	<p>Increase trade in renewables</p> <p>Carbon leakage</p> <p>Increase trade in bio-materials</p>
Impact on Developing Economies (predicted)	Could function like an NTB on the import of manufactured goods from developing economies.	<p>Could negatively impact Developing economies' export of raw materials</p> <p>Could incentivize developing economies to diversify their exports</p> <p>Could undermine local industrial development</p> <p>Could create employment</p> <p>Could benefit consumers</p> <p>Could enhance waste</p> <p>Could increase imports of nonrecyclable waste</p> <p>Could create new opportunities in services (recycling etc.)</p>	Could create opportunity in new industries (e.g., bio packaging)
Domestic Policy	Adopt more robust regulation in the area of CE.	<p>Conduct country-level studies to analyse and anticipate the impact of CE</p> <p>Identify threats and opportunities</p> <p>Develop technical regulations/standards for imported second-hand materials</p>	Conduct country-level studies to analyse and anticipate the impact of CE. Identify threats and opportunities
Trade Agreements	Participate in the development of international standards Request technical assistance to ensure that businesses can meet the standards	<p>Use trade agreements to build capacity in emerging sectors like recycling. This can be done through negotiations in market access and services.</p> <p>Support the development of adequate definitions and standards for secondary products at an international level</p> <p>Support the development of adequate definitions and standards for secondary products at an international level</p>	Negotiate tariff reductions/removal for products in new industries



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